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FIELD WORK PLAN
PERMANENTE CREEK FLOOD PROTECTION PROJECT
MOUNTAIN VIEW AND LOS ALTOS, CALIFORNIA
PROJECT NO. 10244001-1211

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PROPOSAL TO CONDUCT A GEOTECHNICAL INVESTIGATION FOR THE PERMANENTE CREEK FLOOD PROTECTION PROJECT

PROJECT NO. 10244001

A. INTRODUCTION AND BACKGROUND

This document presents the Capital Program Services Geotechnical Group's (CPSGG's) proposal to conduct a geotechnical investigation for the Permanente Creek Flood Protection Project (Project No. 10244001).

The Permanente Creek Flood Protection Project is part of the 2000 voter-approved Clean, Safe Creeks, and Natural Flood Protection Program (CSC Program). According to the CSC Program, improvements to Permanente Creek will protect approximately 2,000 parcels in primarily residential areas from a one-percent (100-year) flood event.

The purpose of the project is to provide flood protection for homes, businesses, and other facilities in the cities of Mountain View and Los Altos by accomplishing the following objectives:

- Provide one-percent (100-year) flood protection to approximately 2,000 parcels in the Permanente Creek Watershed by December 2010.
- Revise the FEMA flood hazard maps to reflect one-percent (100-year) flood protection along the improved creek areas to eliminate the requirements for flood insurance in this community.

A preliminary geotechnical investigation was previously performed by the CPSGG for the Permanente Creek Planning Study, and the results were presented in our report dated February 2, 2005. The project is currently in the Design Phase. This proposed geotechnical investigation will supplement the results of our preliminary 2005 investigation and provide conclusions and recommendations for the various project design elements.

B. PROJECT DESCRIPTION

The recommended project is composed of the following project elements:

- Floodwalls north of Highway 101 on levee channels and the Permanente Diversion
- Channel widening along reaches of Permanente Creek and Hale Creek (including new U-Frame channels and two box culvert replacements)
- A new diversion structure at the upstream end of Permanente Diversion

Floodwalls

Concrete floodwalls will be built on top of the existing levees north of Highway 101, bringing the top of bank up to the required freeboard elevation. The downstream end of the floodwall protection would be in the high grounds of the Shoreline Park. These high grounds will most likely be used as part of the Bay Levee being currently studied by the U.S. Army Corps of Engineers. Thus, when the Bay Levee is completed, seamless tidal flood protection would be provided.

Previous geotechnical investigations have indicated that the existing levees are generally in good condition. The floodwall work would begin approximately 120 meters (400 feet) north of Amphitheater Parkway and continue for about 850 meters (2800 feet) upstream to Highway 101. The floodwall heights would range from zero (where levee freeboard is adequate) to a maximum of approximately 1.2 meters (4 feet), with an average elevation of 0.6 meters (2 feet). Typical construction procedures would include trench excavation, form work installation, concrete pouring, backfill, and aesthetic texturing on the exposed faces of the floodwall. To address the prospect of long-term sea level rise, the foundations of the floodwalls would be designed such that the walls could be raised by up to 0.6 meters (2 feet), as needed.

Approximately 100m (330 ft) of floodwalls will also be needed just upstream of the confluence between Permanente and Hale Creek [Permanente Station 8+000]. Another 100m (330 ft) of floodwalls will be needed at the Permanente Diversion [Permanente Diversion Station 2+000]. The water surface in this area is slightly above adjacent ground and therefore a floodwall with the required freeboard is needed to provide adequate protection for adjacent properties.

Channel Widening – Permanente Creek

This work involves deepening and enlarging the current concrete channel in Permanente Creek from just upstream of Park Drive to upstream of the confluence with Hale Creek. This work would replace the most badly degraded part of the concrete channels built in the 1960s, thus addressing the most urgently needed part of the concrete channel restoration. It would also increase channel capacity upstream of McKelvey Park so that the full one-percent flows can reach the McKelvey Park flood detention site. Mountain View Avenue bridge (i.e. box culvert) would be rebuilt lower by approximately 0.6 meters (2 feet).

Due to the very limited right-of-way available and the deteriorated condition of the existing channel, temporary shoring may be needed prior to removal of the existing channel. The new channel built would lower the invert elevation upstream of Park Drive by eliminating the drop structure located there currently. The upstream grade would be steepened so that it would conform to existing invert at the Hale Creek confluence. The 24-inch RCP outlet pipe for McKelvey would be built alongside the new channel during the channel construction.

Channel Widening – Hale Creek

This work involves increasing the capacity of some downstream sections of Hale Creek, which currently do not have full one-percent capacity. The sections are:

- Mountain View Avenue Bridge (i.e. box culvert)
- Channel reach from Mountain View Avenue to Arroyo Drive

The proposed work would involve deepening and steepening the channel through elimination of drop structures. The existing concrete trapezoidal channels, which are worn and require repair or replacement soon, would be removed and replaced with a new concrete trapezoidal channel to the 10-percent flood elevation (approximately 1.2 meters or 4 feet deep) with 1:1 side slopes. The top of the channel would be lined with rip-rap protection to the top of bank. In areas where the existing access ramps create poor hydraulic conditions due to large expansion/contraction losses, the channel would be rebuilt such that the ramp area is blocked off the creek channel except during actual maintenance operations.

New Diversion Structure

The existing diversion structure (at the upstream end of the Permanente Diversion) does not function correctly at the present time. The low flow intake was built into the invert of the channel and tends to silt up very quickly during winter flows. The diversion was modified later into an overflow weir parallel to the flow path; but that structure does not allow for low flows to continue down the natural Permanente Creek (Reach P7). Thus, the current flow profile at this location is that all flows, low and high, continue to Stevens Creek.

The existing invert flow inlet would be filled in and the existing diversion structure removed. The new diversion structure would be protected by an overflow weir separating the main flow of the diversion from the flow to be routed to Reach P7 up to the full one-percent flow. This overflow weir would have a low-flow opening in the bottom of it allowing all low flows (under the weir) to pass through to the new diversion structure. There would be a maintenance ramp off Miramonte Ave down to the invert of the vault protecting the new diversion structure to provide adequate maintenance access. A 1.2 meter (4-foot) diameter RCP pipe would connect the new diversion structure to the existing 1.4 meter (54-inch) diameter pipe connecting to Reach P7 downstream of Eastwood Drive.

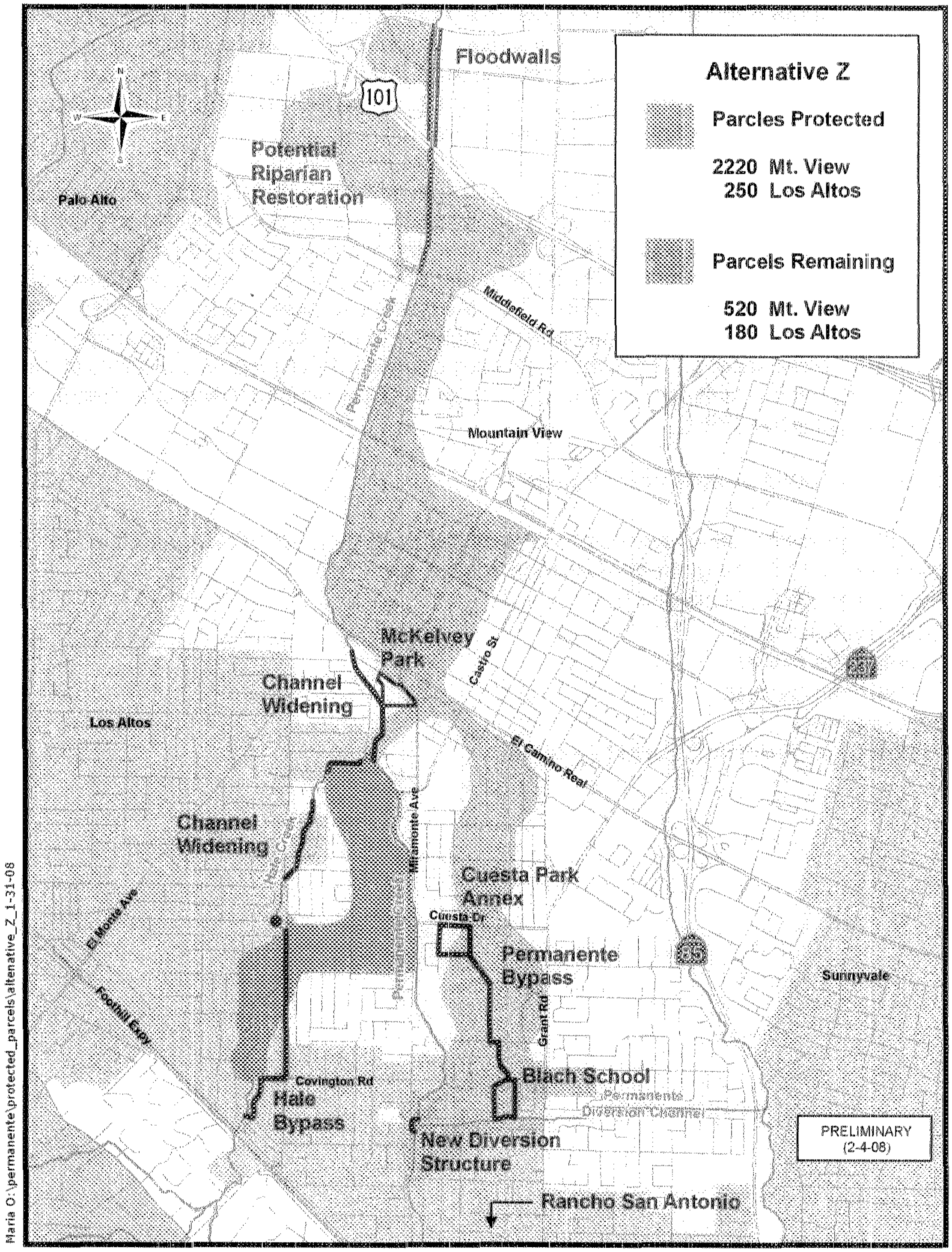
Elements Not Included in In-House Project

A portion of the geotechnical investigation work will be done by an outside consulting firm. The elements not included in our geotechnical investigation are:

- Hale Creek Channel widening
- Hale Creek Bypass
- Cuesta Park Annex
- Permanente Bypass
- Blach School

These elements are shown in the Figure below.

Figure 1 – Project Map



C. PURPOSE OF INVESTIGATION

Based on the CPSGG's discussion with the PM team, the CPSGG understands that the purpose of this geotechnical investigation is to:

- Generally investigate and evaluate the subsurface soil and groundwater conditions
- Recommend foundation types along with design criteria for new floodwalls
- Recommend lateral earth pressure and drainage design for new retaining walls/U-frame channels
- Recommend design parameters for new box culverts (bearing capacity and lateral earth pressure)
- Develop recommendations for site earthwork including fills and backfills,
- Develop recommendations for shoring and trenching for new underground pipes, as appropriate, and
- Provide seismic design criteria and other as-needed geotechnical information to support project design.

D. GENERAL CONDITIONS

D.1 Project Deliverables

Each project deliverable shall meet the quality standards of standard engineering practice, FEMA, and the District. If the project deliverable quality is not satisfactory to PM team, the CPSGG shall make the necessary corrections.

D.2 Field Work Provisions

The CPSGG shall conduct all field work in accordance with the provisions of District's Categorical Exemption document to comply with the California Environmental Quality Act.

D.3 Survey Datum

All work and documents shall be based on the California State Plane Coordinate System, Zone 3 NAD 1983 and NAVD 88.

E. PROJECT ASSUMPTIONS AND QUALIFICATIONS

To accomplish this scope of services, the PM team shall provide the CPSGG with all the information listed below, if available. The CPSGG shall be responsible for reviewing and determining the adequacy of such information.

- Electronic files or hard copies of existing right-of-way maps;
- Electronic files or hard copies of the plan and profile sheets showing the existing conditions;
- Electronic files or hard copies of the hydraulic model showing the 100-year water surface profile (This assumes the hydraulic modeling results shall be available by July 2007);
- Electronic files or hard copies of civil drawings for existing box culverts and bridges, if available;
- Boring logs of existing borings drilled by the District along alignment;
- Flood hydrographs;
- Environmental Site Assessment Report, if available prior to preparation of Field Workplan; and

- To protect the driller and our field personnel from harmful exposure to hazardous materials during drilling and soil sampling, our CPSGG's environmental consultant shall prepare a site-specific Health and Safety Plan.

In the execution of this scope of services, the CPSGG assumes:

- The PM team shall obtain all encroachment permits on City or private property with assistance from the CPSGG;
- Design lateral and vertical pressures for box culverts shall consider USACE's and Caltrans criteria;
- All numerical values in the text of the geotechnical report shall be in both Metric and English units;
- Drill cuttings and fluids shall be temporarily placed in 55-gallon steel drums during drilling and then transported to 20-cy covered environmental bins located at storage site(s) designated by the PM team. The CPSGG shall coordinate with an environmental services subcontractor to test and dispose the drill cuttings as appropriate; and
- No personal protection for hazardous materials is required during drilling or testing.

The following services are not included in the scope of services:

- Corrosion testing and analysis
- Hazardous materials testing

F. SCOPE OF WORK

This proposed scope of services for a geotechnical investigation is intended to satisfy the current purpose of the project as outlined in Section B above.

1 PROJECT MANAGEMENT

This task shall consist of the CPSGG's in-house personnel and sub-consultant/contractor supervision, quality control, and review of costs. The purpose of this task is to provide organization structure, planning, tracking, coordination, communication, and management of the work.

1.1 Project Management

The CPSGG shall provide project management services. The CPSGG's Unit Manager shall provide the needed resources to complete the scope of services. The CPSGG's Project Manager shall perform the following:

- Coordinate and direct the CPSGG team to complete the scope of services;
- Manage the CPSGG team and sub-consultant/contractor contracts;
- Monitor and control project scope, budget, and schedule;
- Provide effective communication with the CPSGG and PM team;
- Notify the PM team immediately of any adverse public relations issues; and
- Develop and implement an effective quality assurance/quality control plan.

1.2 Meetings

The CPSGG shall meet with the PM team to coordinate on all aspects of the work throughout the project. Monthly team meetings shall be held. The monthly meetings shall include a discussion on the progress of the project deliverables. If the schedule significantly changes, the CPSGG shall prepare revised milestones for discussion at the meeting. During the field and laboratory testing phases of this work, additional meetings may be required. The CPSGG's project manager shall organize, prepare agendas, and administer the meetings. The PM team shall prepare the meeting notes of the meetings.

1.3 Tracking and Coordination

The CPSGG shall prepare a list of beginning and ending dates for all major geotechnical tasks. The PM team shall prepare a detailed project schedule using the Microsoft Project Software from that list. The CPSGG project manager shall track the project progress and budget following the Microsoft Project Schedule, and report any budget or time overruns to the PM team. The CPSGG shall provide recommendations to resolve schedule and costs issues if they are not on target.

Task 1 Deliverables

Task 1 deliverables consist of the following: Meeting Agendas, List of Milestone Dates, Monthly Updates to Milestone Dates, and Recommendations to resolve schedule and cost issues (if needed).

2 FIELD WORK AND LABORATORY TESTING

In this task, the CPSGG shall perform the field work and laboratory testing to complete the geotechnical investigation.

2.1 Project Description for CEQA Document

The CPSGG shall prepare a project description for the PM team to prepare a CEQA document. The project description shall include a brief written narrative of the field work to be performed including information necessary to determine the environmental impacts from the work. This shall include the finalization of the Soil Boring Plan by the PM team under direction from the CPSGG.

2.2 Data Review

The CPSGG shall review readily available applicable information including: (1) as-built drawings, (2) geotechnical information from previous studies, (3) site survey information, and (4) right-of-way maps showing location of property lines.

2.3 Field Workplan

Prior to commencing field work, the CPSGG shall prepare a Field Workplan for PM team review and concurrence. This Field Workplan shall include:

- A brief written narrative of the work to be performed including a description of all permits needed and any special conditions noted for the field work after data review;
- Final Boring Site Plan showing CPSGG's recommendations on boring locations and type of boring to be performed;
- Locations and design of piezometers;
- All necessary traffic control plans, encroachment permits, District well permits, and any other regulatory permits needed;
- A schedule breaking down all field work to be performed and who shall be doing it;
- The Health and Safety Plan;
- The Best Management Practices (BMPs) to be followed;
- The proposed drilling contractor(s) including proof of insurance and C-57 license; and
- Name of the geotechnical testing laboratory.

2.4 Field Location of Borings

By visual observation, the CPSGG team shall initially locate the borings from the Final Boring Site Plan. After the borings and piezometers are installed, the PM team shall coordinate and arrange for surveying all borings and piezometers. The CPSGG shall sufficiently mark the location of the finished borings in the field by using "whiskers" or other appropriate method. The CPSGG shall assist in locating any borings that can not be found by the survey crew.

2.5 Encroachment Permits , Traffic Control Plans, and ROE Agreements

After finalizing Boring Site Plan, the PM team shall apply for and obtain encroachment permits from the City or County having jurisdiction for the applicable boring locations. The PM team shall prepare all traffic control plans and correspondence necessary to obtain the permits under direction from the CPSGG. The CPSGG shall be responsible for implementing the traffic control plan and permit requirements.

After finalizing the Boring Site Plan, the PM team shall obtain all necessary Right-of-Entry (ROE) Agreements for the applicable boring locations. The CPSGG shall be responsible for adhering to the applicable requirements in the ROE agreements. Where specifically requested by a property owner in a ROE Agreement, the CPSGG shall contact the property owner and discuss any special requirements they may have regarding access.

2.6 Field Work Coordination, Permits, and Applicable Regulations

The CPSGG shall coordinate all field work activities with stakeholders, public, government agencies, regulatory agencies, and the District. The CPSGG shall conform to all conditions of the CEQA Document, Right-of-Entry Agreements, District well standards, encroachment permit regulations, applicable noise standards, and all other applicable regulations.

The PM team shall brief the CPSGG on the required BMPs prior to beginning field work. The PM team shall coordinate all necessary biologist services and perform all mailings and other necessary notifications. The CPSGG shall coordinate with the PM team to provide the necessary information for the notifications.

2.7 Utility and Access Verification

The CPSGG shall verify that the access and safety issues are addressed for each boring location. Borings shall be drilled on weekdays only unless in special cases as approved by the PM team. The CPSGG shall be responsible for determining the field issues prior to commencing field work and shall follow the standard of care of the profession to verify the location of utilities such as overhead and underground power lines, cables, pipes, or any other services that are likely to be encountered in performing the field exploration work. The CPSGG shall take the following steps to avoid or not disrupt any utility. The CPSGG shall notify Underground Service Alert (USA) for each boring location. To supplement USA, the CPSGG may request for a specialist in underground utility locating services. Based on the results of these two methods, if there is a potential conflict of the boring location with the existing utility, the CPSGG shall either (1) move the exploration point or (2) hand auger the top 5 feet. CPSGG shall also recommend the necessity of special safety or drilling equipment needed for access or to maintain the proper clearances required in accordance with all applicable safety regulations and ordinances.

2.8 Safety

The CPSGG shall contract for a Certified Industrial Hygienist to prepare a Health and Safety Plan for the proposed site work. An Environmental Site Assessment (ESA) is currently being prepared by the PM team's environmental planner. If the ESA is not available in time, then the CPSGG's Industrial Hygienist shall prepare a conservative Health and Safety Plan based on assumptions and limited site information. The CPSGG shall be responsible for adherence to Site Health and Safety Plan.

2.9 Drilling, Logging Borings, and Sampling

The CPSGG shall explore the subsurface soils along the banks of Permanente Creek adjacent to the project elements. For the investigation, the CPSGG shall conduct approximately 17 standard borings, 30 to 45 feet deep along the creek/channel banks and within the U-frame channels. To supplement the standard borings, the CPSGG shall conduct about 6 to 7 Cone Penetration Tests (CPT), 40 to 50 feet deep. Most of the CPTs shall be located in between and/or near the borings along the levees to obtain a continuous soil profile and correlation between the boring and CPT data.

The CPSGG understands that at this time, a total of two bridges / box culverts will be replaced. If deep foundations are needed for the bridges/culverts, some of the proposed borings may be extended to up to 100 feet deep.

Under the proposed investigation plan, the CPSGG shall only conduct a limited number of new borings along the levees north of Highway 101. These levees have been extensively investigated and evaluated by Parikh Consultants in 2000. The CPSGG shall review and utilize the information from Parikh's geotechnical report, and supplement that information with additional test borings and Cone Penetration Tests (CPTs) to confirm the subsurface conditions, as appropriate.

The CPSGG shall coordinate and invite quotations from at least three different drilling contactors and select the most qualified driller based on their experience, available equipment, and price. CPSGG shall provide all necessary labor, materials, and tools, to perform the required borings, CPTs, and subsurface soil sampling shown in the Field Workplan. All borings along the levees and near the culverts shall be drilled to at least 30 feet below the ground surface or as otherwise directed by the CPSGG field engineer. For these borings, the type of drill rig used shall be hollow-stem auger. The hollow-stem auger rig shall be used in the majority of boring locations along the levees and culverts. The rotary wash rig shall be used in borings where cave-in of granular soils is to be minimized; in this method, the drill rods and cutting bit are rotated mechanically while the hole is being advanced. When groundwater is reached, drilling mud is introduced as a circulating fluid. Rotary wash drilling shall also be used for all deep borings at or near the bridge abutments, if needed.

In cohesive soils, a 2.5-inch minimum outside diameter (O.D.) split-spoon Modified California sampler with brass liners shall be used to collect relatively undisturbed samples. Where practical, undisturbed soil samples shall also be collected from cohesive materials by using thin-walled Shelby tubes in accordance with ASTM D 1587 "Thin-Walled Tube Geotechnical Sampling of Soils." The Shelby tubes shall have a minimum outside diameter of 3 inches and shall have a minimum length of 30 inches. Shelby tubes shall be pushed in cohesive soils primarily where samples for consolidation tests are needed.

Disturbed samples shall be collected from cohesionless materials using the Standard Penetration Test (SPT) sampler in accordance with ASTM D 1586. Should the grain size of encountered cohesionless material be of such large size as not to be able to be effectively sampled with the SPT sampler, a larger diameter split-spoon drive sampler (3-inch O.D.) shall be used. Where liquefaction potential is to be evaluated, the drilling procedure shall be modified so that granular samples are obtained in accordance with ASTM D6066 "Standard Practice for Determining the Normalized Penetration Resistance of Sands for Evaluation of Liquefaction Potential".

The CPSGG field engineer shall classify the soil encountered in the borings in accordance with the Unified Soil Classification System and prepare a boring log for each boring. The hammer weight, drop height, and number of blows for spoon penetration of three 6-inch intervals shall be recorded in accordance with ASTM D 1586 method. The obtained samples of cohesionless material shall be of sufficient volume for mechanical grain size analyses and shall be visually classified, logged, and placed in tightly sealed plastic bags or jars. Sampling of material shall typically be performed at 1, 3, 5, and every subsequent 5 feet below existing ground surface. Alternative sampling intervals might also be adjusted where there are significant changes in soil material or as determined by the CPSGG engineer in the field during drilling. A California licensed Civil Engineer, Geotechnical Engineer, Certified Engineering Geologist, or Registered Geologist having sufficient experience in geotechnical field exploration shall direct and supervise the field exploration work as the drilling and sampling progresses. Descriptions and visual classification of the soil samples shall be performed in the field and shall conform to ASTM D-2488, "Practice for Description and Identification of Soils (Visual-Manual Procedure)." Upon completion of laboratory soils testing, the boring logs shall be modified as appropriately with ASTM D 2487, "Standard Classification of Soil for Engineering Purposes (Unified Soil Classification System)."

Samples shall be numbered sequentially from the top of the boring to the bottom and labeled as follows: boring number, sample number, depth to the top of the sample from ground surface. "Top" and "Bottom" shall be clearly written on each undisturbed sample tube to delineate the ends.

All borings shall be backfilled with cement bentonite grout in accordance with District, City, and County standards including District Ordinance No. 91-1, District Well Standards, and Department of Water Resources Bulletin 74-81.

The CPSGG shall coordinate with the PM team and arrange for repair and replacement of fences, landscaping, or other features damaged or removed for drill rig access. While performing the field work, the CPSGG shall act in a professional manner at all times and keep the work area tidy. This is especially important when the work is being performed under a ROE Agreement. The CPSGG shall minimize any interference to property owners and the properties during the execution of the work. Field work shall periodically be documented with digital photos. The CPSGG shall take at least one photo of each boring and CPT location, including the drill rig.

CPSGG team shall coordinate with an environmental services subcontractor to supply 55-gallon steel drums and 20-cy covered environmental storage bins for storing drill cuttings on site and arrange for testing and disposal of drill cuttings. Unless otherwise directed by the PM team, CPSGG shall engage the environmental services subcontractor to dispose the drill cuttings.

2.10 Installation of Piezometers

As part of the field exploration, piezometers shall be installed in some boreholes with slotted casing from five to 20 feet. However, the CPSGG shall not place piezometers on private right-of-way. The CPSGG estimates about 4 to 5 piezometers shall be required to monitor the groundwater level along the levees, U-frame channels, and at or near the culverts / bridge abutments. CPSGG shall recommend the well design and submit for PM team review and concurrence in the Field Workplan. The CPSGG shall obtain District Well Permits for the installation of the wells.

2.11 Piezometer Readings

The CPSGG shall be responsible for monitoring the water levels in the piezometers at approximately one month intervals for six months after installation. Thereafter, if additional readings are required for design, the PM team shall be responsible for piezometer readings.

2.12 Sample Handling and Delivery to Laboratory

Undisturbed samples shall be properly sealed and capped with plastic caps, and shall be stored and shipped in conformance with ASTM D 4220, “Preserving and Transporting Soil Samples” Group C to maintain in-situ water content and minimize sample disturbance after removal from the borings. All undisturbed and disturbed samples shall be delivered to the laboratory within five working days after completion of the field work. The CPSGG shall follow a standard chain of custody procedures for sample handling and delivery.

2.13 Phase I Laboratory Testing Plan

Based on observed field conditions and the review of laboratory test results available from borings reviewed in Data Review, the CPSGG shall prepare a Phase I Laboratory Testing Plan. The Phase I Laboratory Testing Plan shall be submitted to the PM team for concurrence after one-half of the borings have been performed. After PM team concurrence, laboratory testing shall commence. In this manner, laboratory testing shall begin early and progress simultaneously with the field work.

2.14 Phase II Laboratory Testing Plan

As described in Phase I Laboratory Testing Plan above, laboratory testing shall be underway while drilling proceeds. When drilling is complete, the CPSGG shall prepare and submit for PM team concurrence a Phase II Laboratory Testing Plan consisting of hand annotated boring logs showing proposed laboratory tests. This shall include a table of all tests to be performed. After submittal, the CPSGG and the PM team shall meet to discuss the final laboratory testing plan.

2.15 Laboratory Testing and Results

Laboratory work shall include testing of selected soil samples to determine relevant engineering properties and classifications of the sub-soils. In general, the laboratory testing program shall include moisture content and dry density, Atterberg limits, grain size analysis, permeability, consolidation, shear strength tests, and resistance R-value tests, as appropriate. A reputable geotechnical laboratory shall be utilized to perform the laboratory testing. The CPSGG shall submit all Laboratory Testing Results in two phases. Tests performed under the Phase I plan shall be submitted immediately upon completion. All remaining laboratory tests shall be submitted as a single submittal to the PM team after the laboratory testing is complete.

Task 2 Deliverables
The deliverables for Task 2 shall consist of: Field Workplan.

3 ENGINEERING ANAYLSIS, EVALUATION, AND RECOMMENDATIONS

Using the results of field investigation and laboratory soil testing, the CPSGG shall perform all necessary engineering analyses to determine soil parameters needed for the design of the various project elements. This should include evaluating slope stability, seepage, bearing capacity, pile load capacity, settlement, lateral earth pressure, liquefaction potential, and any other elements considered necessary by CPSGG. All engineering analyses shall be performed following the Federal Emergency Management Agency and US Army Corps of Engineers' standards and guidelines for levee and other flood control structures as applicable. The CPSGG shall also develop conclusions and recommendations for design and construction of the project structures as described in Section B. The CPSGG shall prepare a brief description of analysis to be performed and locations of critical cross-sections to be analyzed, including assumptions to be used, for PM team concurrence prior to performing analysis. Analyses shall be performed in accordance with procedures outlined in:

- USACE's Engineer Manual No. 1110-2-1913 – Design and Construction of Levees
- USACE's Engineer Manual No. 1110-2-1904 – Engineering and Design: Settlement Analysis
- USACE's Engineer Manual No. 1110-2-1902 – Slope Stability
- USACE's Technical Letter 1110-2-569 – Engineering and Design: Design Guidance for Levee Underseepage, and
- USACE's Engineer Manual 1110-2-2502 – Retaining and Floodwalls.
- USACE and Caltrans Standard for culvert design

This engineering analysis and evaluation shall be submitted as a part of the geotechnical investigation report. and shall include but not be limited to the following:

- Liquefaction analysis
- Slope stability analyses;
- Groundwater conditions at the site and requirements for drainage and dewatering,
- Potential usability of onsite materials as fill and/or the usability of nearby materials sources,
- Design criteria related to the required culvert, floodwalls, bridge, and other attendant flood protection structures, including:
    - Bearing capacity
    - Lateral earth pressures (active, at-rest and passive)
    - Settlement
    - Modulus of subgrade reaction, and
    - Sliding friction coefficient
- Review and analyze cross sections of channel in close proximity to existing structures including but not limited to:

    - Locations to be determined by CPSGG and the PM team prior to the geotechnical analysis.
    - Provide alternatives to protect existing close structures during construction.
- Evaluation of potential geological hazards including liquefaction, lateral spreading, differential seismic compaction, fault rupture and ground shaking, and

Task 3 Deliverables
The Deliverables for Task 3 shall consist of discussion of the analyses and presentation of results in the geotechnical reports listed in the next task.

4 GEOTECHNICAL REPORT PREPARATION

The CPSGG shall prepare a Draft and Final Geotechnical Report. The report shall be prepared as a technical report and shall present a detail description of our investigation results, discussion, conclusions, and recommendations with respect, but not limited, to the following:

- Introduction including site location, description and purpose of investigation
- Field Investigation and Laboratory Work
- Subsurface Conditions and Geology
- Analysis and Recommendations
- Site Location Map
- Test Boring Location Plan
- Test Boring Logs
- Laboratory data including methods and calculations, field methods and equipment
- Levee design, including bearing capacity, settlement, seepage ,and slope stability and recognize any unusual subsurface materials and foundations issues,
- Groundwater conditions at all sites and requirements for drainage, or dewatering
- Design criteria for cut and fill slopes,
- Potential usability of onsite materials as fill and/or the usability of nearby material sources,
- Design criteria related to required structures,
- Evaluation of potential geological hazards including liquefaction, lateral spreading, differential seismic compaction, fault rupture and ground shaking,
- Recommendations for lateral earth pressures (active and passive), filter materials, geo-textiles and temporary slope inclinations for construction,
- Recommendations for safe excavation slopes, and shoring & dewatering requirements
- Design criteria for erosion control measures,
- CBR or R-values to be used in the design of pavements for roads and parking areas, and recommendations for site preparation and grading, and fill material specifications, and compaction criteria

Five (5) hard copies (bound) of the Draft Report and ten (10) hard copies (bound) and one (1) electronic copy of the Final Report shall be prepared.

Task 4 Deliverables
The Deliverables for Task 4 shall consist of: Draft Geotechnical Reports and Final Geotechnical Reports.

G. COST ESTIMATE

Task-1: Project Management

1.1. Select drilling contractors:

Sr. Engr: 1 hr @ $130/hr = $ 130
Assoc Engr: 10 hrs @ $125/hr = $1,250
Asst Engr: 40 hrs @ $120/hr = $4,800

Subtotal: 51 hrs: $6,180

1.2. Review and Finalize Health & Safety Plan Prepared by Consultant:

Sr. Engr: 2 hrs @$130/hr = $260
Assoc Engr: 4 hrs @ $125/hr = $500
Asst Engr: 40 hrs @ $120/hr = $4,800

Subtotal: 46 hrs $5,560

1.3: Meetings, Coordination, Tracking, & Quality Control

Sr. Engr: 2 hrs/wks(12 wks): 24 hrs: @ $130/hr = $3,120
Assoc Engr: 12 hrs/wk (12 wks): 144 hrs @ $125/hr = $18,000
Asst Engr: 4 hrs/wk (12 wks): 48 hrs @ $120/hr = $5,760

Sub Total: 216 hrs: $26,880

Task-2: Fieldwork & Laboratory Testing

2.1. Fieldwork: (Field workplan, utility clearance, coordination, & boring work)

Sr. Engineer: 2 hrs/wk (3 wks): 6 hrs @ $130/hr = $780
Assoc Engr. 20 hrs/wk (3 wks): 60 hrs @125/hr = $7,500
Asst Engr: 45 hrs/wk (3 wks): 135 hrs. @120/hr = $16,200

Sub Total: 201 hrs: $24,480

2.2. Phase 1 Laboratory Testing (Edit boring logs & select test samples):

Sr. Engr: 4 hrs @ $130/hr = $520
Assoc. Engr: 20 hrs @125/hr = $2,500

Subtotal: 24 hrs $3,020

2.3. Phase 2 Laboratory Testing:(Review phase1 tests, edit boring logs, & select test samples)

Sr. Engr:	2 hrs @ $130/hr =	$260
Assoc Engr:	30 hrs @ $125/hr =	$2,500
Asst Engr:	8 hrs @ $120/hr =	$960
Subtotal:	40 hrs	$3,720

Task-3: Engineering Analysis and Evaluation

3 Engineering Analysis:

Sr. Engr:	10 hrs @ $130/hr =	$1,300
Assoc Engr:	80 hrs @125/hr =	$10,000
Asst Engr:	140 hrs @$120/hr =	$16,800
Subtotal:	230 hrs	$28,100

Task-4: Geotechnical Report Preparation

4 Geotechnical Report:

Sr. Engr:	20 hrs @ $130/hr =	$2,600
Assoc Engr:	120 hrs @125/hr =	$15,000
Asst Engr:	40 hrs @$120/hr =	$4,800
Subtotal:	280 hrs	$22,400

Total Estimated District Labor Hours & Cost: 1,088 hours: $ 120,340

Outside Contractor Cost:

1. Drilling Contractor:

17 Standard borings = $25,000
Drilling/Piezometer Materials = $10,000

2. CPT Contractor:

7 CPTs = $7,000

3. Drums & Drill Cutting Disposal = $20,000

4. Laboratory Testing:	lump sum:	$30,000
5. Health & Safety Consultant:	lump sum:	$8,000
6. Concrete Corer for Channel work:	lump sum:	$5,000
7. Utility Locator Service:	lump sum:	$4,000
Subtotal:		$109,000

Total Estimated Cost: $120,340 + $109,000 = $229,340

H. SCHEDULE

The work described in the scope of services shall be completed according to the following schedule:

MILESTONE	START DATE	COMPLETION DATE
Prepare Project Description for CEQA Document	Feb 1, 2009	Mar 31, 2009
Prepare Health and Safety Plan	March 1, 2009	May 1, 2009
Prepare Field Workplan	March 1, 2009	May 31, 2009
Perform Borings, CPTs, and Piezometers	June 15, 2009	July 3, 2009
Prepare Phase I Laboratory Testing Plan	June 23, 2009	June 25, 2009
Prepare Phase II Laboratory Testing Plan	July 6, 2009	July 8, 2009
Laboratory Testing	June 25, 2009	Aug 1, 2009
Engineering Analyses	Aug 1, 2009	Sept 31, 2009
Prepare Draft Geotechnical Report	Sept 15, 2009	Nov 1, 2009
PM Team Review	Nov 1, 2009	Nov 15, 2009
Prepare Final Geotechnical Report	Nov 15, 2009	Dec 15, 2009

1.0 INTRODUCTION

As outlined in our proposal, the Capital Program Services Geotechnical Group (CPSGG) presents the following field work plan for the design level geotechnical investigation of the Permanente Creek Flood Protection Project (PCFPP), located in Mountain View and Los Altos, California.

We obtained information about this project from Mr. Saied Hosseini, District Senior Project Manager, and Mr. Gordon Lau, District Project Manager.

1.1 Project Description

The PCFPP is part of the 2000 voter approved Clean, Safe Creeks, and Natural Flood Protection Program. In accordance with this program, the proposed improvements to Permanente Creek shall protect approximately 1,664 parcels downstream of El Camino Real from a 100-year flood and prevent flooding of Middlefield Road and Central Expressway.

Permanente Creek flows south to north draining portions of Mountain View, Los Altos, and unincorporated Santa Clara County. Water flows from the Santa Cruz Mountains in the south to the floor of the Santa Clara Valley and the San Francisco Bay in the north. Permanente Creek

Permanente Creek forms in the upper watershed area at the confluence of the North Branch (Ohlone Creek) and South Branch Permanente Creeks. The major tributary to Permanente Creek is Hale Creek, which connect to Permanente Creek just south of El Camino Real. The majority of the flows from the upper Permanente watershed area are diverted to Stevens Creek through the Permanente Diversion Channel. Water flows in Permanente Creek, Hale Creek and the Permanente Diversion Channel are conveyed through box culverts and open channels.

The purpose of the project is to provide flood protection for homes, businesses, and other facilities in the cities of Mountain View and Los Altos by accomplishing the following objectives:

- Provide one-percent (100-year) flood protection to approximately 2,000 parcels in the Permanente Creek Watershed by December 2010.
- Revise the FEMA flood hazard maps to reflect one-percent (100-year) flood protection along the improved creek areas to eliminate the requirements for flood insurance in this community.

A preliminary geotechnical investigation was previously performed by the CPSGG for the Permanente Creek Planning Study, and the results were presented in our report dated February 2, 2005. This geotechnical investigation will supplement the results of our preliminary 2005 investigation and provide conclusions and recommendations for the various project design elements.

The recommended project is composed of the following project elements:

- Floodwalls north of Highway 101 on levee channels and the Permanente Diversion
- Channel widening along reaches of Permanente Creek and Hale Creek (including new U-Frame channels and two box culvert replacements)
- A new diversion structure at the upstream end of Permanente Diversion

Floodwalls

Concrete floodwalls will be built on top of the existing levees north of Highway 101, bringing the top of bank up to the required freeboard elevation. The downstream end of the floodwall protection would be in the high grounds of the Shoreline Park. These high grounds will most likely be used as part of the Bay Levee being currently studied by the U.S. Army Corps of Engineers. Thus, when the Bay Levee is completed, seamless tidal flood protection would be provided.

Previous geotechnical investigations have indicated that the existing levees are generally in good condition. The floodwall work would begin approximately 120 meters (400 feet) north of Amphitheater Parkway and continue for about 837 meters (2746 feet) upstream to Highway 101. The floodwall heights would range from zero (where levee freeboard is adequate) to a maximum of approximately 1.2 meters (4 feet), with an average elevation of 0.6 meters (2 feet). Typical construction procedures would include trench excavation, form work installation, concrete pouring, backfill, and aesthetic texturing on the exposed faces of the floodwall. To address the prospect of long-term sea level rise, the foundations of the floodwalls would be designed such that the walls could be raised by up to 0.6 meters (2 feet), as needed.

A combined 65m (213 ft) of floodwalls will also be needed beginning at the confluence of Hale and Permanente Creeks extending upstream along both Hale and Permanente Creeks [to Permanente Station 8+050 and Hale Station 0+015]. Another 100m (330 ft) of floodwalls may be needed at the Permanente Diversion [Permanente Diversion Stations 1+910 to 2+010]. The water surface in this area is slightly above adjacent ground and therefore a floodwall with the required freeboard is needed to provide adequate protection for adjacent properties.

Channel Widening – Permanente Creek

This work involves deepening and enlarging the current concrete channel in Permanente Creek from just upstream of Park Drive to the confluence with Hale Creek. The planned design would replace the most badly degraded part of the concrete channels built in the 1960s, thus addressing the most urgently needed part of the concrete channel restoration. It would also increase channel capacity upstream of McKelvey Park so that the full one-percent flows can reach the McKelvey Park flood detention site. The Mountain View Avenue bridge (i.e. box culvert) would be rebuilt lower by approximately 0.6 meters (2 feet).

Due to the very limited right-of-way available and the deteriorated condition of the existing channel, temporary shoring may be needed prior to removal of the existing channel. The new channel built would lower the invert elevation upstream of Park Drive by eliminating the drop structure located there currently. The upstream grade would be steepened so that it would conform to existing invert at the Hale Creek confluence. The 24-inch RCP outlet pipe for McKelvey would be built alongside the new channel during the channel construction.

Channel Widening – Hale Creek

This work involves increasing the capacity of some downstream sections of Hale Creek, which currently do not have full one-percent capacity. The sections are:

- Mountain View Avenue Bridge (i.e. box culvert)
- Channel reach from Mountain View Avenue to Arroyo Drive

The proposed work would involve deepening and steepening the channel through elimination of drop structures. The existing concrete trapezoidal channels, which are worn and require repair or replacement soon, would be removed and replaced with a new concrete trapezoidal channel to the 10-percent flood elevation (approximately 1.2 meters or 4 feet deep) with 1:1 side slopes. The top of the channel would be lined with rip-rap protection to the top of bank. In areas where the existing access ramps create poor hydraulic conditions due to large expansion/contraction losses, the channel would be rebuilt such that the ramp area is blocked off the creek channel except during actual maintenance operations.

New Diversion Structure

The existing diversion structure (at the upstream end of the Permanente Diversion) does not function correctly at the present time. The low flow intake was built into the invert of the channel and tends to silt up very quickly during winter flows. The diversion was modified later into an overflow weir parallel to the flow path; but that structure does not allow for low flows to continue down the natural Permanente Creek (Reach P7). Thus, the current flow profile at this location is that all flows, low and high, continue to Stevens Creek.

The existing invert flow inlet would be filled in and the existing diversion structure removed. The new diversion structure would be protected by an overflow weir separating the main flow of the diversion from the flow to be routed to Reach P7 up to the full one-percent flow. This overflow weir would have a low-flow opening in the bottom of it allowing all low flows (under the weir) to pass through to the new diversion structure. There would be a maintenance ramp off Miramonte Ave down to the invert of the vault protecting the new diversion structure to provide adequate maintenance access. A 1.2 meter (4-foot) diameter RCP pipe would connect the new diversion structure to the existing 1.4 meter (54-inch) diameter pipe connecting to Reach P7 downstream of Eastwood Drive.

Elements Not Included in In-House Project

A portion of the geotechnical investigation work will be done by an outside consulting firm. The elements not included in our geotechnical investigation are:

- Hale Creek Channel widening
- Hale Creek Bypass
- Cuesta Park Annex
- Permanente Bypass
- Blach School

The project is currently in the design phase; therefore, the recommended project has been developed at this time. The project's current tasks, as stated in CPSGG's proposal, include the following:

- Generally investigate and evaluate the subsurface soil and groundwater conditions,
- Recommend foundation types along with design criteria for new floodwalls,
- Recommend lateral earth pressure and drainage design for new retaining walls/U-frame channels,
- Recommend design parameters for new box culverts (bearing capacity and lateral earth pressure),
- Develop recommendations for site earthwork including fills and backfills,
- Develop recommendations for shoring and trenching for new underground pipes, as appropriate, and
- Provide seismic design criteria and other as-needed geotechnical information to support project design.

1.2 Scope of Geotechnical Field Investigations

This Field Work Plan addresses the following scope of work items:

- A brief written narrative of the work to be performed including a description of all permits needed and any special conditions noted for the field work after data review.
- Final Boring Site Plan showing CPSGG's recommendations on boring locations and type of boring to be performed;
- Locations and design of piezometers;
- All necessary traffic control plans, encroachment permits, District well permits, and any other regulatory permits needed;

- A schedule breakdown of all fieldwork to be performed and the personnel in charge of performing the work, including contact phone numbers of all personnel;
- The Health and Safety Plan;
- The Best Management Practices (BMPs) to be followed;
- The proposed drilling contractors(s) including proof of insurance and C-57 license; and
- Name of the geotechnical testing laboratory.

2.0 FIELD INVESTIGATION PROGRAM

The CPSGG's design level field investigation program for the PCFPP will consist of hollow stem auger borings, low overhead borings, and Cone Penetration Test (CPT) borings. We summarize the field investigation program in Table 1 – Boring Summary. We also present our proposed boring locations in Appendix A, Boring Locations Plan.

2.1 Soil Borings

As shown in Table 1 – Boring Summary, the CPSGG proposes to complete a total of twenty one (21) soil borings and CPTs; more specifically, fourteen (14) soil borings and seven (7) CPTs. The purpose of these soil borings and CPTs will be to evaluate soil, foundation, and groundwater conditions for the proposed improvements along the PCFPP alignment. During our investigation, the CPSGG will recover soil samples for visual examination and laboratory testing. In general, each soil boring will be drilled at approximately 1000-feet intervals along both sides of the channel, where accessible, and near bridges that are targeted for proposed improvements. The CPSGG proposes to drill channel bank and bridge borings to about 45 feet below existing ground surface (bgs) and CPTs to a maximum depth of 75 feet bgs. Occasionally, the rigs may encounter difficult soil conditions that could prohibit the boring or CPT from being advanced to its intended depth.

The CPSGG will assign a California licensed Civil Engineer, Geotechnical Engineer, or Engineer-in-Training (operating under the supervision of a California licensed Civil Engineer or Geotechnical Engineer) to log each boring. He will direct and supervise the field investigation as the drilling and sampling progresses. CPTs will be performed by a licensed CPT contractor; no logging is required for these borings because logs are generated automatically via electronic readings. A District field engineer will direct the contractor to the CPT locations and retrieve the CPT logs on a daily basis.

The types of drill rigs the CPSGG plans to use will be a truck mounted hollow stem auger, truck mounted CPT, and a low-overhead hollow stem auger. The truck mounted hollow stem auger will be used for the majority of channel bank borings. Where overhead high voltage lines, trees, or limited space are present, we will utilize a low-overhead hollow stem auger rig; this rig may be track mounted, trailer mounted, or portable. For the bridge structures, we plan to use the truck mounted hollow stem auger rig. If necessary we may switch to the rotary wash drilling method; this drilling method is advantageous in sandy soils because the circulating drilling fluid can prevent the soils from caving or swelling. In general, the CPTs are located near or between hollow stem auger borings. We located our CPTs in this configuration so we may draw comparisons with the soils visually classified from the adjacent hollow stem auger borings and previous borings performed by CPSGG and Parihk Consultants, Inc.

2.2 Piezometer Installation

At select boring locations, based on the proposed improvements, the CPSGG plans to convert four (4) borings into standpipe piezometers upon completion of the field logging and sampling. Piezometers may be installed in either a hollow stem auger or rotary wash boring. The CPSGG will direct the drilling contractor to construct each piezometer in the original bore hole unless difficult drilling conditions require us to drill a duplicate bore hole in an adjacent location.

In general, standpipe piezometers will be constructed from 2-inch diameter polyvinyl chloride (PVC) schedule 40 pipe. The PVC pipe consists of two sections with a lower filter (slotted) section extending through the water bearing soil layers to approximately 2 to 5 feet above the water table. A solid PVC riser pipe will extend from the top of the filter section to the top of the bore hole. The CPSGG will direct the drilling contractor to backfill the annular space between the bore hole excavation and filter section with #3 Monterey sand (or equivalent) from the base of the bore hole to approximately 2 feet above the top of filter section. The annular seal will consist of approximately 2 feet of hydrated bentonite pellets above the sand and then topped off with approximately 5 feet of 27 sack neat cement. Based on California well construction standards, each piezometer will be constructed with a minimum 2-inch radial thickness of annular seal. The CPSGG will coordinate with the District's Water Production and Wells Unit to have an inspector watch the placement of the annular seal. The drilling contractor will cap each piezometer with a flush-mounted utility box that can be accessed for continual groundwater monitoring. We present a typical standpipe piezometer installation in Figure 1.

2.3 Logging and Sampling

The District field engineer shall classify and prepare a boring log of the soils encountered in each boring in accordance with the Unified Soil Classification System and ASTM test method D-1586. While logging each bore hole, the District field engineer shall record the hammer weight, drop height, and number of blows for spoon penetration of three 6-inch intervals. Cohesionless soil samples will be of sufficient volume for mechanical grain size analyses and placed in tightly sealed plastic bags or jars. In general, we shall perform soil sampling at intervals of 1, 3, 5, and every 5 feet thereafter, below existing ground surface (bgs). The District field engineer may alternate sampling intervals if he observes significant changes in soil material while drilling.

A California licensed Civil Engineer, Geotechnical Engineer, Certified Engineering Geologist, or Registered Geologist having sufficient experience in geotechnical field exploration shall direct and supervise the field exploration work as the drilling and sampling progresses. Descriptions and visual classification of the soil samples shall be performed in the field and shall conform to ASTM D-2488, "Practice for Description and

Identification of Soils (Visual-Manual Procedure)." Upon completion of laboratory soils testing, the boring logs shall be modified as appropriately with ASTM D-2487, "Standard Classification of Soil for Engineering Purposes (Unified Soil Classification System)."

2.4 Permits, Traffic Control, and Utility Clearance

The field investigation will require several types of permits and agreements. Of the 21 borings and CPTs, the following boring locations will require either a permit or "Right of Entry" (ROE) agreement:

Location	Creek	Access Requirement	Permitting Entity
TB-1	Permanente	Right of Entry	City of Mountain View
CPT-2	Permanente	Right of Entry	City of Mountain View
TB-4	Permanente	Permission to Enter	Mr. Carl Rodert
CPT-5	Permanente	Right of Entry	City of Mountain View
CPT-6	Permanente	Right of Entry	City of Mountain View
TB-6	Permanente	Permission to Enter	Mr. Gary Shouse
TB-8	Permanente	Right of Entry	City of Los Altos
TB-9	Permanente	Right of Entry	City of Los Altos
CPT-7	Permanente	Right of Entry	City of Los Altos

For locations TB-4 and TB-6, the only feasible access points to the boring location are through the Rodert property off of Park Drive and the Shouse property off of Mountain View Ave, respectively. For boring TB-6, the actual boring is located within the District right-of-way. The project management team will coordinate with Mr. Shouse at least two days prior to accessing the boring through his property. Project management, with the assistance of the CPSGG, has obtained the City of Mountain View and City of Los Altos ROE agreements and encroachment permits.

All other permits required for the field investigation are District requirements, such as well construction permits for all four (4) borings that will be converted into standpipe piezometers and exploratory boring permits for the CPTs greater than 45 feet bgs. All District well installation permits and exploratory boring permits will be obtained by the CPSGG.

Borings TB-8, TB-9, CPT-5, CPT-6, and CPT-7 will require traffic control measures. The actual traffic control plan will be subject to City of Mountain View and City of Los Altos approval. The CPSGG has procured a traffic control contractor to implement the traffic control plan. Borings along the levees where pedestrian access is permitted may also require some minor traffic control. The CPSGG will follow any traffic control measures outlined in the Categorical Exemption (CE) for borings performed along the levees or other areas of concern as stated.

Prior to any drilling activities, the CPSGG will contact Underground Service Alert (USA) to request utility locating by the representative public agencies and private utility companies that may be affected by our drilling. We will contact USA at least 48 hours prior to the start of drilling. Our staff will keep records of USA confirmation numbers and expiration dates for all borings. In the event we have not drilled some borings before the USA clearance expires, our staff will renew all remaining borings for USA clearance. Additionally, the CPSGG will retain Scan Tech to perform private utility locating services. Our staff will coordinate a field visit with the Scan Tech representative to provide a secondary level of utility clearance for every boring location.

3.0 FIELD INVESTIGATION SCHEDULE AND RESOURCES

The field investigation for this design level geotechnical investigation will take approximately 7 to 8 working days to complete. We plan to begin the field work on Tuesday, June 23rd. To accomplish the drilling work in this short time frame, the CPSGG plans to mobilize the truck mounted hollow stem auger drill rig and CPT concurrently. Mr. Karl Neuman, District Assistant Engineer, will be the field supervisor and will oversee all on-site drilling operations and health and safety issues. Additionally, Mr. Errol Gabrielson will perform on-site assistance with the CPT rig. Mr. Steven Wu, District Associate Engineer, will review all soil samples logged by the District field engineers, assign geotechnical laboratory testing, and coordinate with our geotechnical laboratory for sample pickup. In Appendix B, we present our field investigation schedule, organization chart, and contact information of all District field engineers and pertinent agency contacts for this field investigation.

4.0 HEALTH AND SAFETY PLAN

The CPSGG retained Enviro Safetech, Inc. to provide Health and Safety Plan (HASP) services. The CPSGG staff coordinated with Enviro Safetech to perform a site visit and provide pertinent available information to aid in developing the HASP. The HASP covers general safety issues and field hazards inherent to working around drilling as well as site specific hazards along the Permanente Creek alignment.

At the beginning of the drilling investigation, the CPSGG field supervisor will conduct a tail-gate safety meeting to establish safety practices for the drilling job and advise District field staff and drilling contractor staff of site-specific hazards. The CPSGG field supervisor will also monitor and enforce all safety practices outlined in the HASP for the duration of the drilling investigation. The District field staff and drilling contractors will have their own copy of the HASP and will be required to keep the HASP in their trucks in the event of an emergency. The CPSGG will also provide project management with a copy of the PCFPP HASP.

5.0 BEST MANAGEMENT PRACTICES

Based on the approved CE for this project, our field investigation will follow and abide to the best management practices (BMPs) as set forth in the CE. Our field staff will have a copy of the approved BMPs on the job site at all times. For reference purposes, we present a copy of the BMPs in Appendix C of this work plan.

6.0 PROPOSED DRILLING CONTRACTOR(S)

The CPSGG has retained Gregg Drilling and Testing, Inc. (Gregg) to provide drilling and CPT services. Gregg will perform all truck mounted hollow stem auger, optional rotary wash auger, low overhead or limited access drilling, CPT, and soil cutting disposal services. The Purchase Order (PO) number for this contract is 0000008964. Gregg is licensed to perform drilling services in the State of California (C-57). Their C-57 drilling contractor's license numbers is 485165.

We present proof of insurance for Gregg Drilling and Testing, Inc. in Appendix D of this work plan.

7.0 GEOTECHNICAL LABORATORY

The CPSGG has retained Cooper Testing Laboratories (Cooper) for our geotechnical laboratory testing program. Cooper is a certified laboratory under the United States Army Corp of Engineers to perform geotechnical testing for levees and embankment dams. The SO number for Cooper is 00000013092.

TABLES

Permanente Creek Flood Protection Project

Design Phase Geotechnical Investigation

	Permanente Creek	**Hale Creek**	**TOTAL**
Standard Borings	9	1	**10**
Low Overhead Borings	2	1	**3**
Limited Access Borings	1	0	**1**
Total Borings	12	2	**14**

Total CPTs	7	0	**7**

Total Convert to Piezo	4	0	**4**

FIGURES

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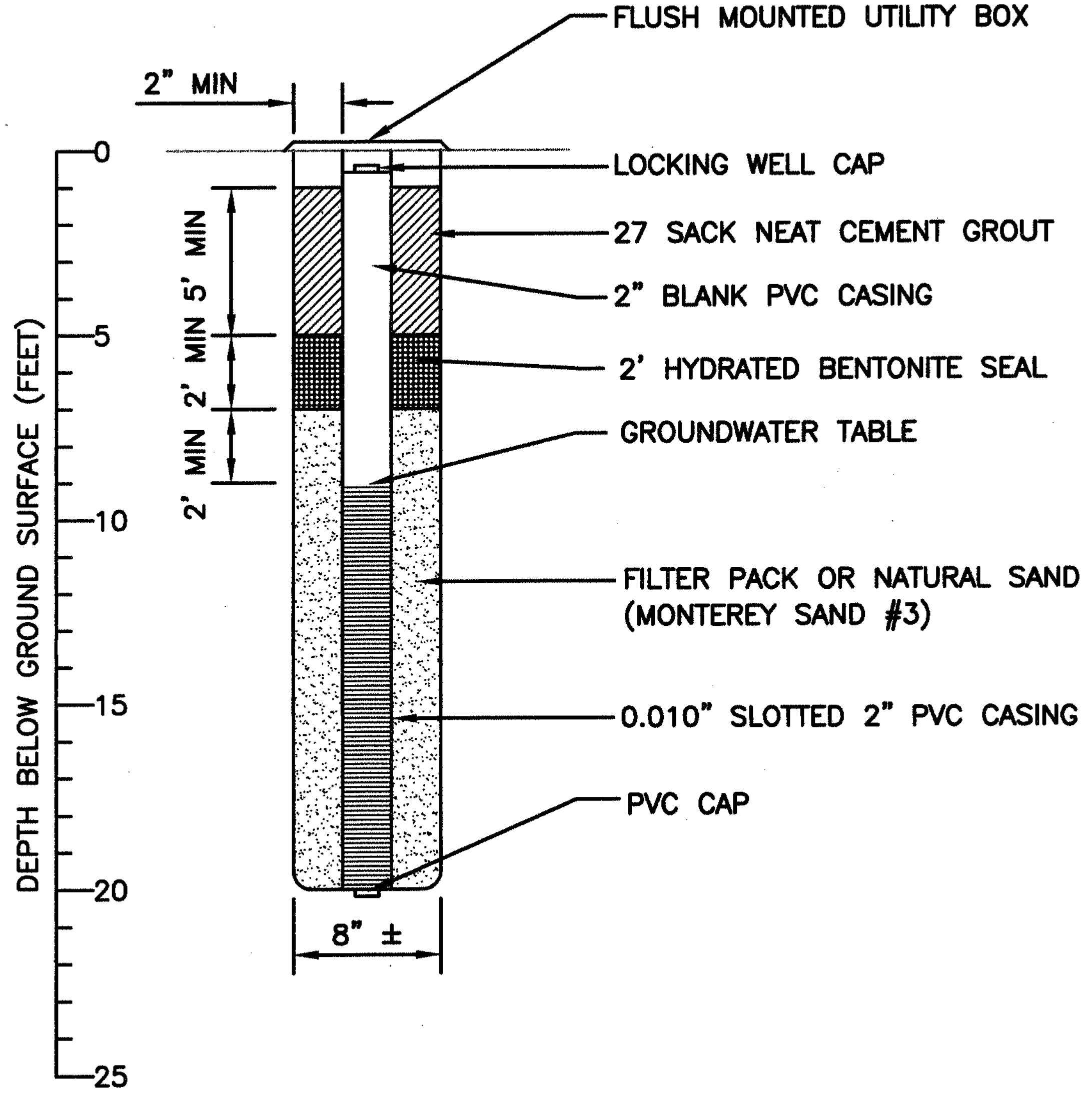
FLUSH MOUNTED UTILITY BOX
2" MIN
LOCKING WELL CAP
27 SACK NEAT CEMENT GROUT
2" BLANK PVC CASING
2' HYDRATED BENTONITE SEAL
GROUNDWATER TABLE
FILTER PACK OR NATURAL SAND (MONTEREY SAND #3)
0.010" SLOTTED 2" PVC CASING
PVC CAP
5' MIN
2' MIN
2' MIN
8" ±
DEPTH BELOW GROUND SURFACE (FEET)
0
5
10
15
20
25

NOTE: ACTUAL SLOTTED CASING DEPTHS CAN VARY DEPENDING ON GROUNDWATER CONDITIONS ENCOUNTERED IN THE FIELD.

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

TYPICAL STANDPIPE PIEZOMETER CONSTRUCTION

SCALE
NTS

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PROJECT NUMBER
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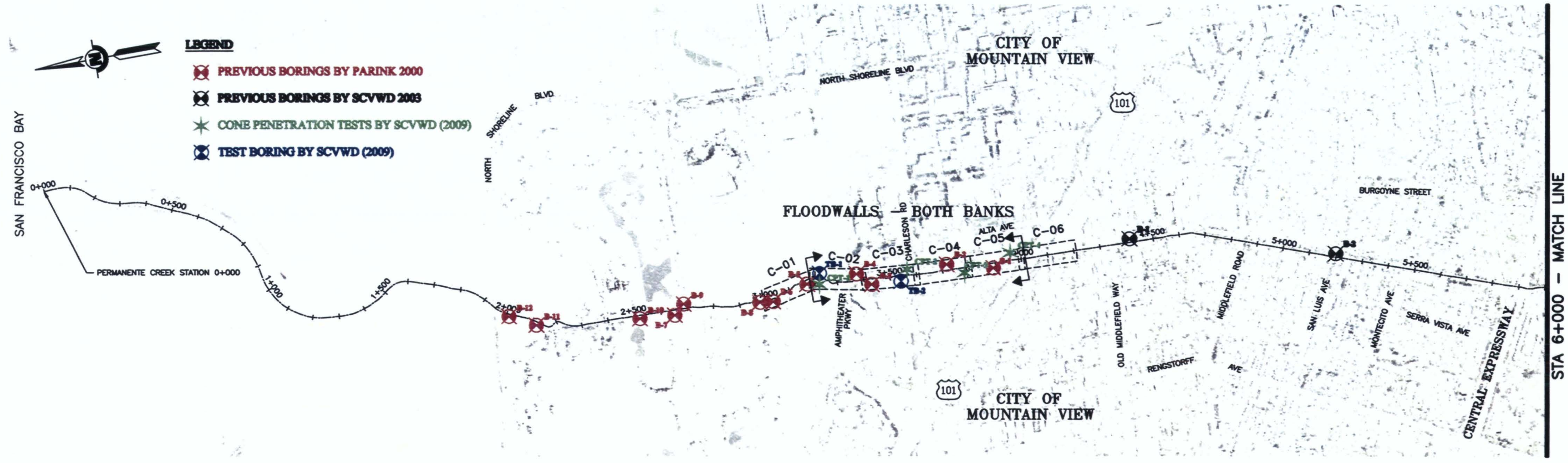
FIGURE
1

APPENDIX A

SOIL BORING SITE PLAN



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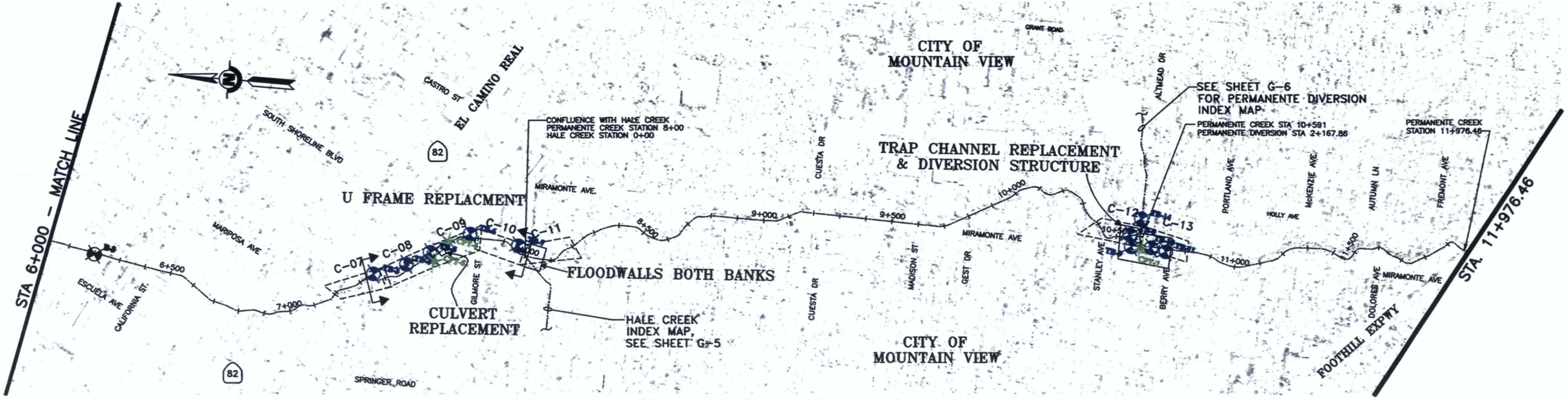

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DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION
PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK FLOOD PROTECTION PROJECT

PERMANENTE CREEK SOIL BORING INDEX MAP

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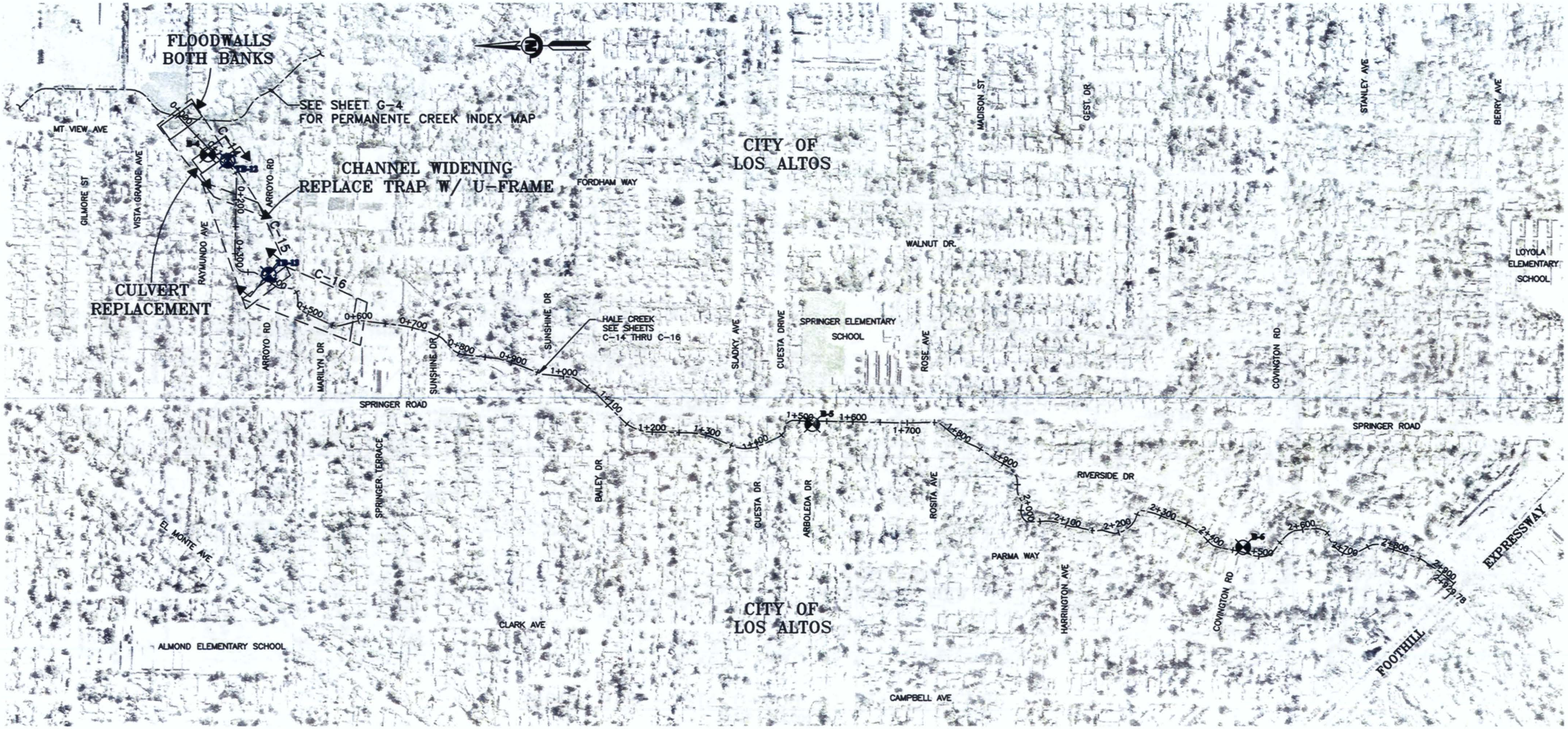
PROJECT NUMBER 26244001

SHEET CODE: G-4

PAGE NUMBER: 4 OF 28



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DATE
OCT. 2008
DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION
PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:
PERMANENTE CREEK
FLOOD PROTECTION PROJECT
HALE CREEK
SOIL BORING INDEX MAP

SCALE
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PAGE NUMBER:
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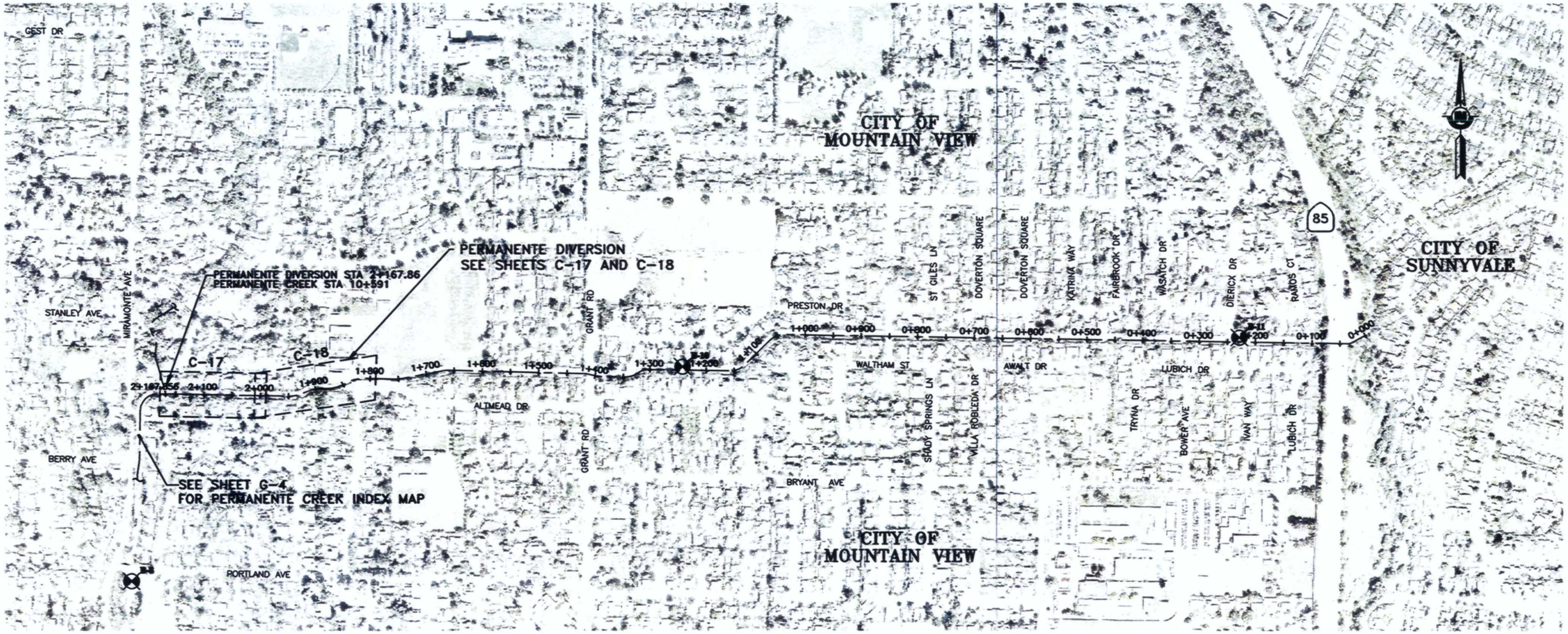

INDEX MAP – STA 0+000 TO STA 2+167.86

SCALE 1:4,000

REV	DESCRIPTION	DATE	APPR.	REFERENCE INFORMATION AND NOTES

DATE
OCT. 2008
DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION
PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK
FLOOD PROTECTION PROJECT

PERMANENTE DIVERSION
SOIL BORING INDEX MAP

SCALE
AS SHOWN

VERIFY SCALES
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PROJECT NUMBER
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SHEET CODE:
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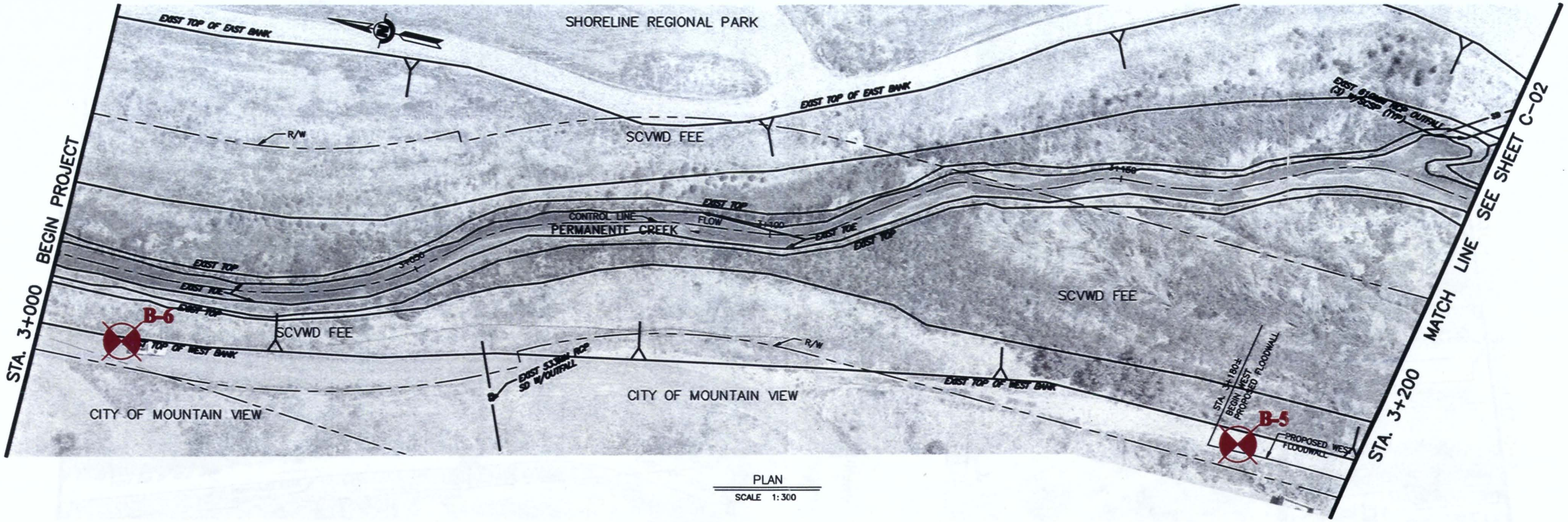
PAGE NUMBER:
6 OF 28



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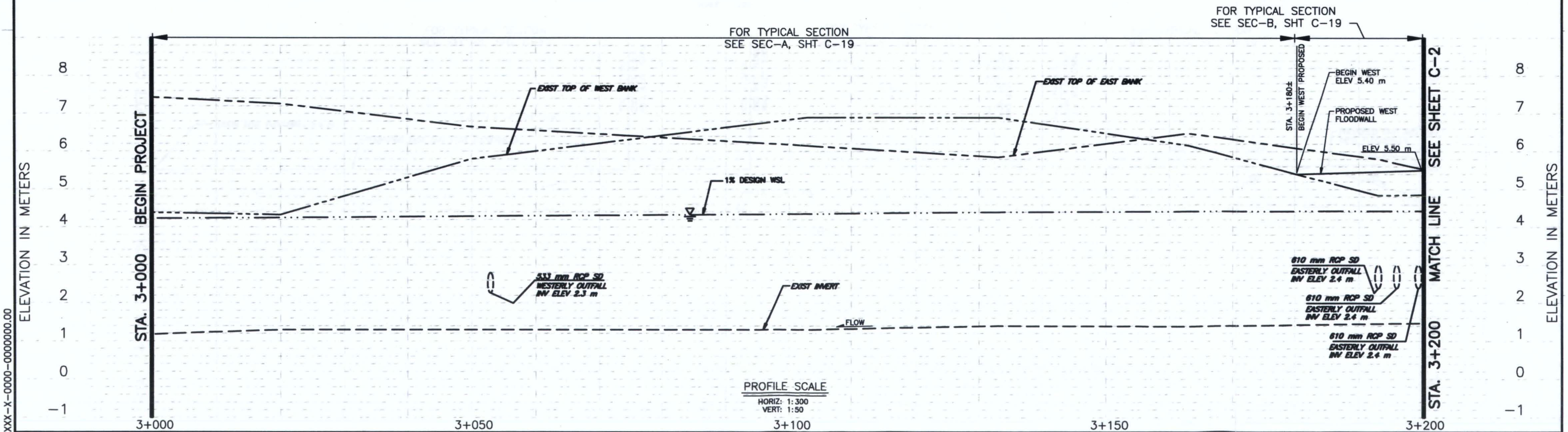

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REFERENCE INFORMATION AND NOTES
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DATE
OCT. 2008
DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION
PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK
FLOOD PROTECTION PROJECT

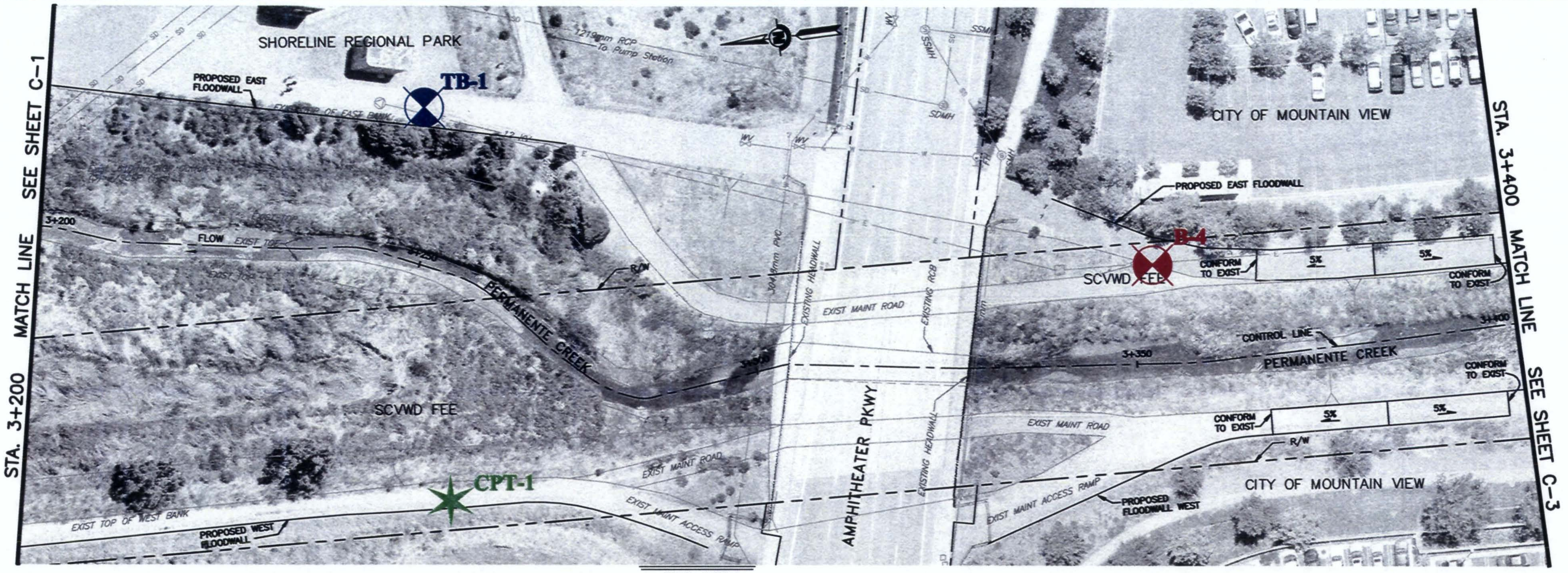
PERMANENTE CREEK
SOIL BORING SITE PLAN

SCALE
AS SHOWN

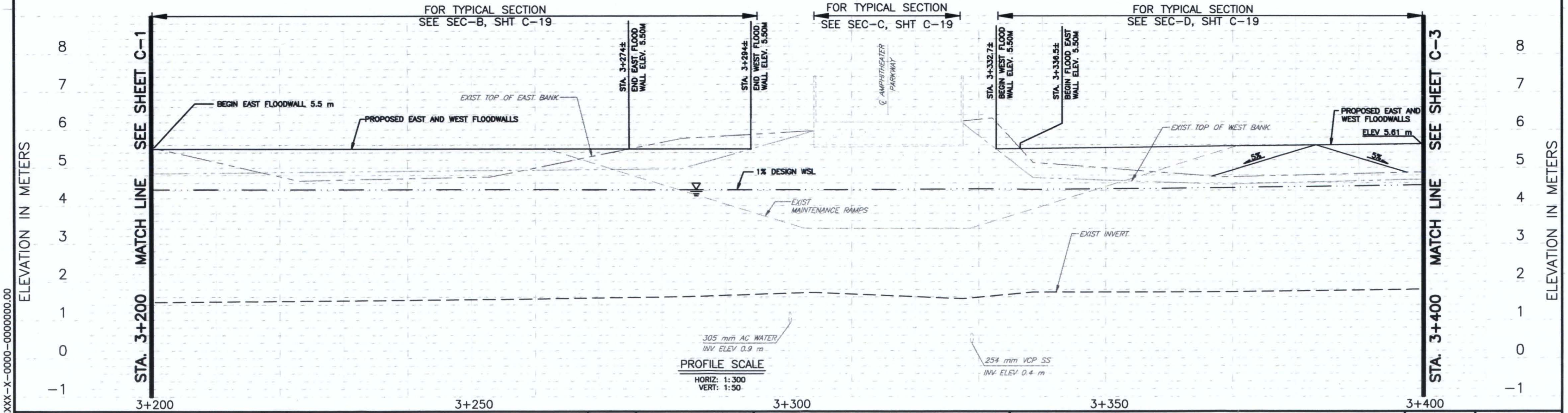
VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

PROJECT NUMBER
26244001

SHEET CODE:
C-1



SCALE 1:300


FOR TYPICAL SECTION SEE SEC-B, SHT C-19
FOR TYPICAL SECTION SEE SEC-C, SHT C-19
FOR TYPICAL SECTION SEE SEC-D, SHT C-19
ELEVATION IN METERS
8
7
6
5
4
3
2
1
0
−1
STA. 3+200 MATCH LINE SEE SHEET C-1
BEGIN EAST FLOODWALL 5.5 m
PROPOSED EAST AND WEST FLOODWALLS
EXIST. TOP OF EAST BANK
STA. 3+274± END EAST FLOOD WALL ELEV. 5.50M
STA. 3+294± END WEST FLOOD WALL ELEV. 5.50M
℄ AMPHITHEATER PARKWAY
STA. 3+332.7± BEGIN WEST FLOOD WALL ELEV. 5.50M
STA. 3+336.5± BEGIN FLOOD EAST WALL ELEV. 5.50M
1% DESIGN WSL
EXIST MAINTENANCE RAMPS
EXIST. TOP OF WEST BANK
PROPOSED EAST AND WEST FLOODWALLS
ELEV 5.61 m
5%
5%
EXIST INVERT
305 mm AC WATER INV ELEV 0.9 m
254 mm VCP SS INV ELEV 0.4 m
STA. 3+400 MATCH LINE SEE SHEET C-3
3+200
3+250
3+300
3+350
3+400

PROFILE SCALE
HORIZ: 1:300
VERT: 1:50

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES
1. DESIGN 1% FLOWRATE IS 34.0 CMS

DATE
OCT. 2008
DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION
PROJECT ENGINEER DATE

Santa Clara Valley Water District

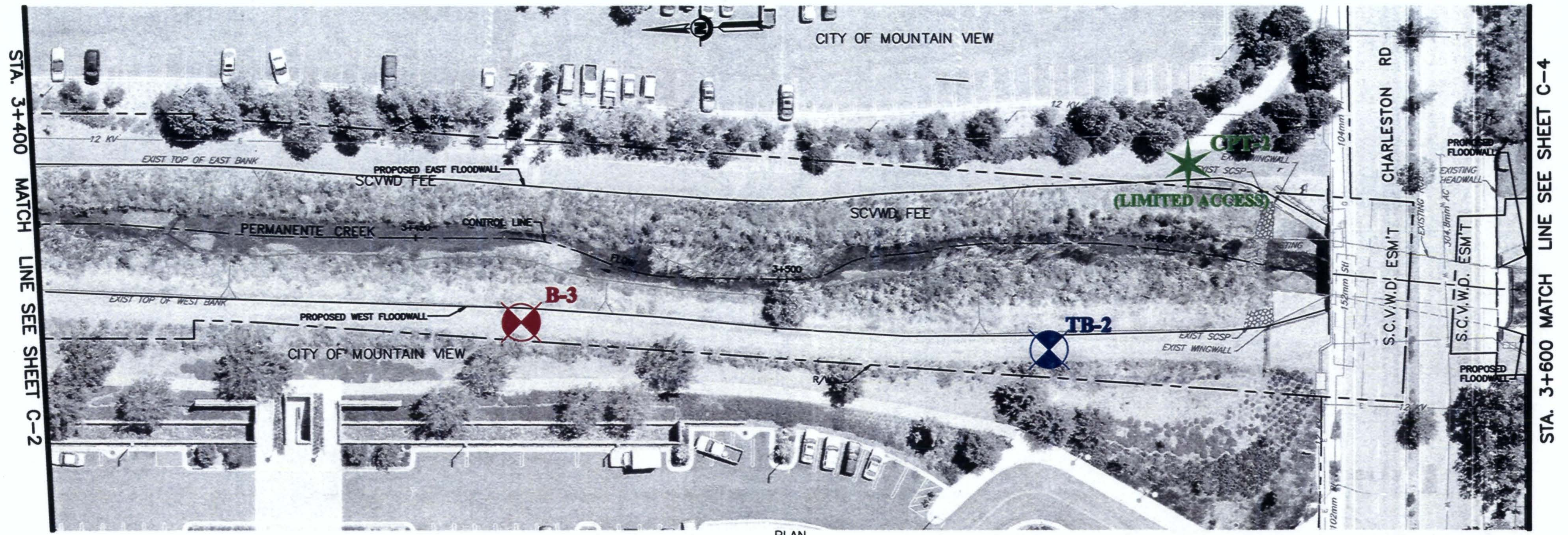
PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK FLOOD PROTECTION PROJECT

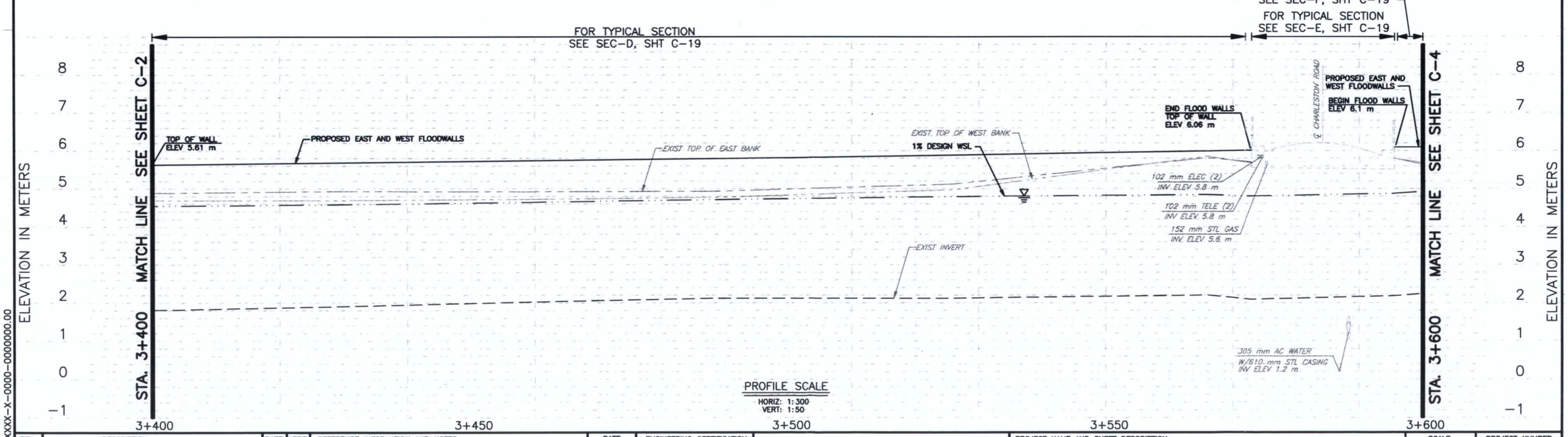
SOIL BORING SITE PLAN

SCALE
AS SHOWN
VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

PROJECT NUMBER
26244001
SHEET CODE:
C-2
PAGE NUMBER:
8 OF 28



PLAN
SCALE 1:300


FOR TYPICAL SECTION SEE SEC-F, SHT C-19
FOR TYPICAL SECTION SEE SEC-E, SHT C-19
FOR TYPICAL SECTION SEE SEC-D, SHT C-19
ELEVATION IN METERS
8
7
6
5
4
3
2
1
0
−1
STA. 3+400 MATCH LINE SEE SHEET C-2
TOP OF WALL ELEV 5.61 m
PROPOSED EAST AND WEST FLOODWALLS
EXIST TOP OF EAST BANK
EXIST TOP OF WEST BANK
1% DESIGN WSL
EXIST INVERT
END FLOOD WALLS TOP OF WALL ELEV 6.06 m
℄ CHARLESTON ROAD
PROPOSED EAST AND WEST FLOODWALLS
BEGIN FLOOD WALLS ELEV 6.1 m
102 mm ELEC (2) INV ELEV 5.8 m
102 mm TELE (2) INV ELEV 5.8 m
152 mm STL GAS INV ELEV 5.6 m
305 mm AC WATER W/610 mm STL CASING INV ELEV 1.2 m
STA. 3+600 MATCH LINE SEE SHEET C-4
3+400
3+450
3+500
3+550
3+600

PROFILE SCALE
HORIZ: 1:300
VERT: 1:50

REV	DESCRIPTION	DATE	APPR.	REFERENCE INFORMATION AND NOTES
				1. DESIGN 1% FLOWRATE IS 34.0 CMS

DATE OCT. 2006
DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION
PROJECT ENGINEER MM-DD-YY

Santa Clara Valley Water District

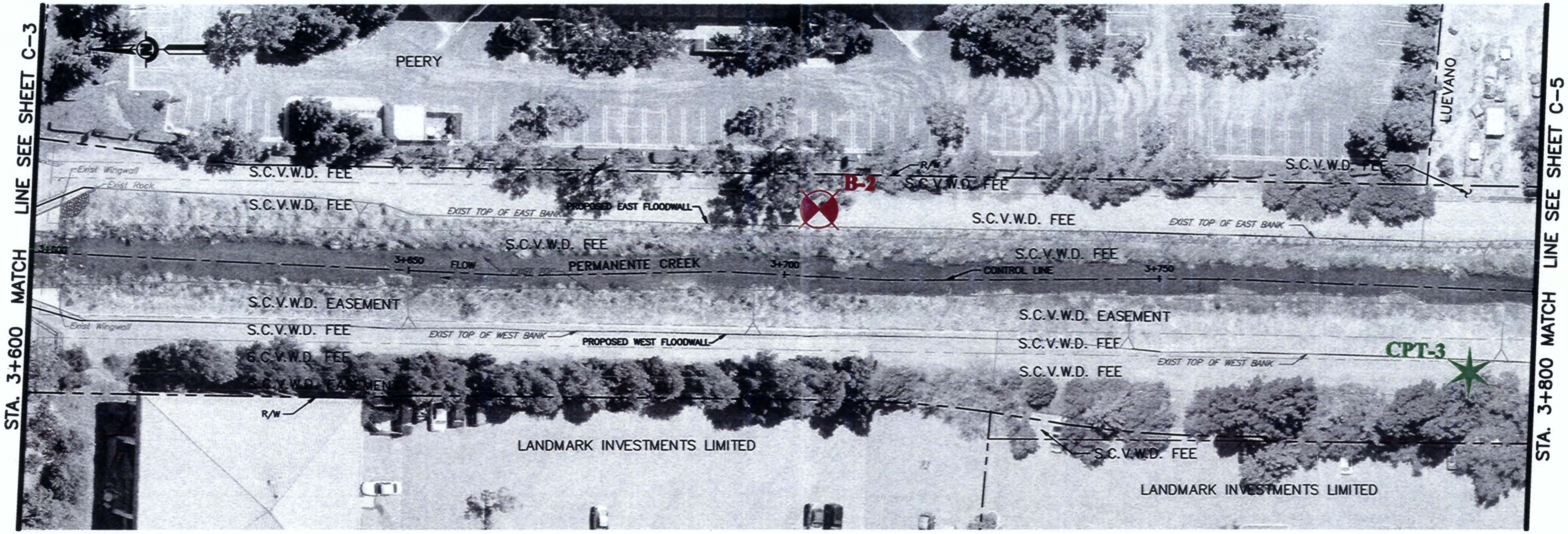
PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK FLOOD PROTECTION PROJECT

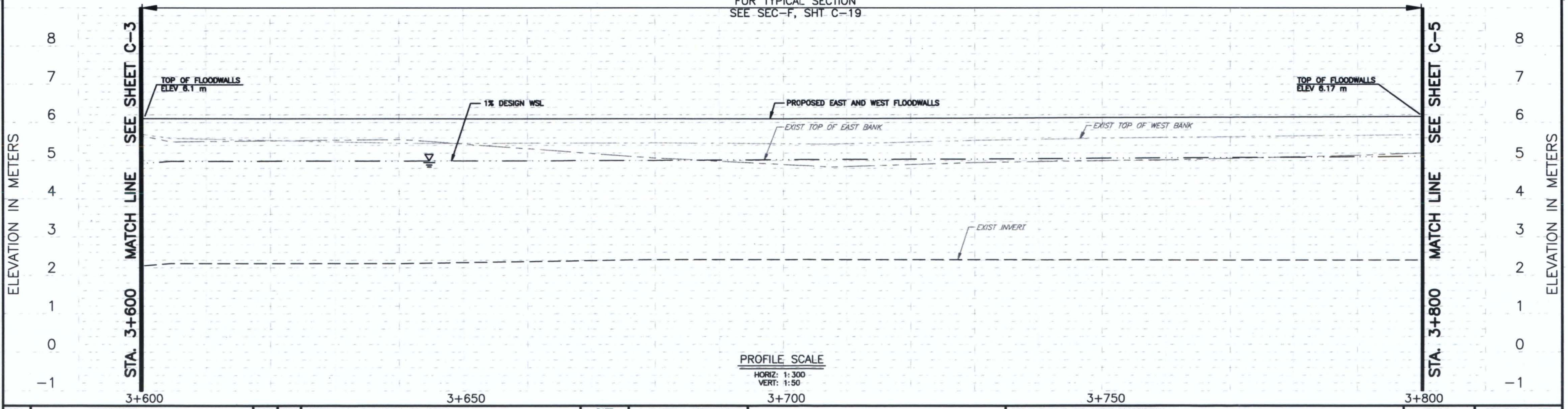
SOIL BORING SITE PLAN

SCALE: AS SHOWN
VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

PROJECT NUMBER: 26244001
SHEET CODE: C-3



PLAN
SCALE 1:300



PROFILE SCALE
HORIZ: 1:300
VERT: 1:50

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. DESIGN 1% FLOWRATE IS 34.0 CMS

DATE	OCT. 2008
DESIGN	
DRAWN	
CHECKED	

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK FLOOD PROTECTION PROJECT

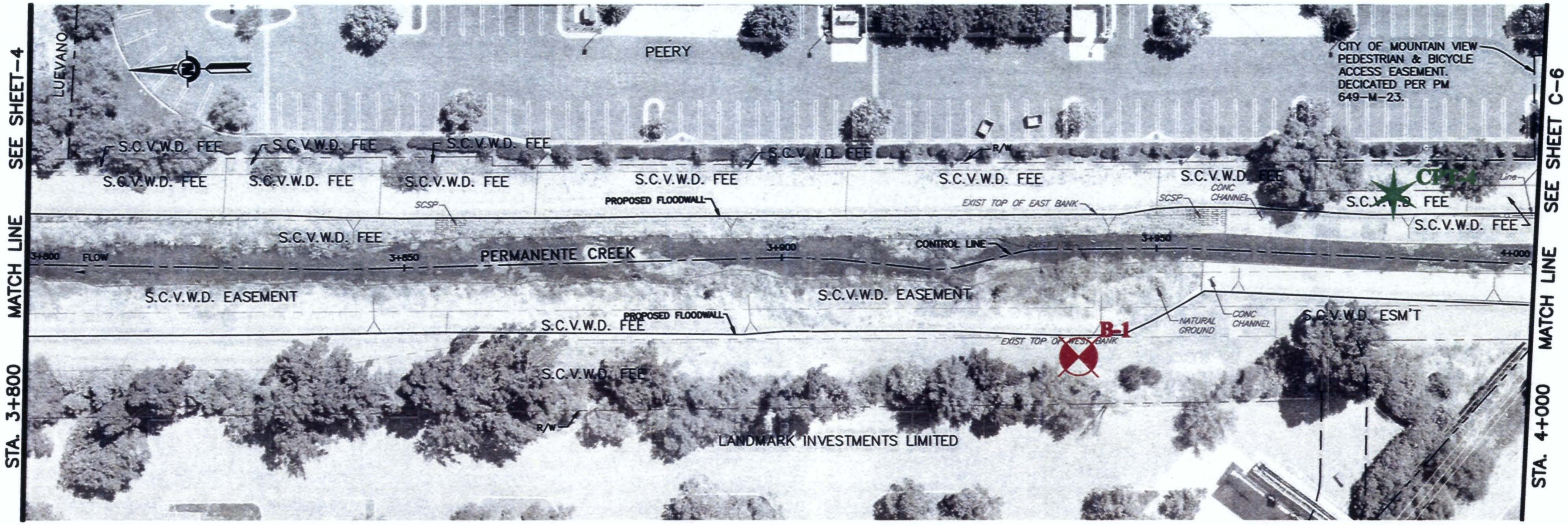
SOIL BORING SITE PLAN

SCALE: AS SHOWN

VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

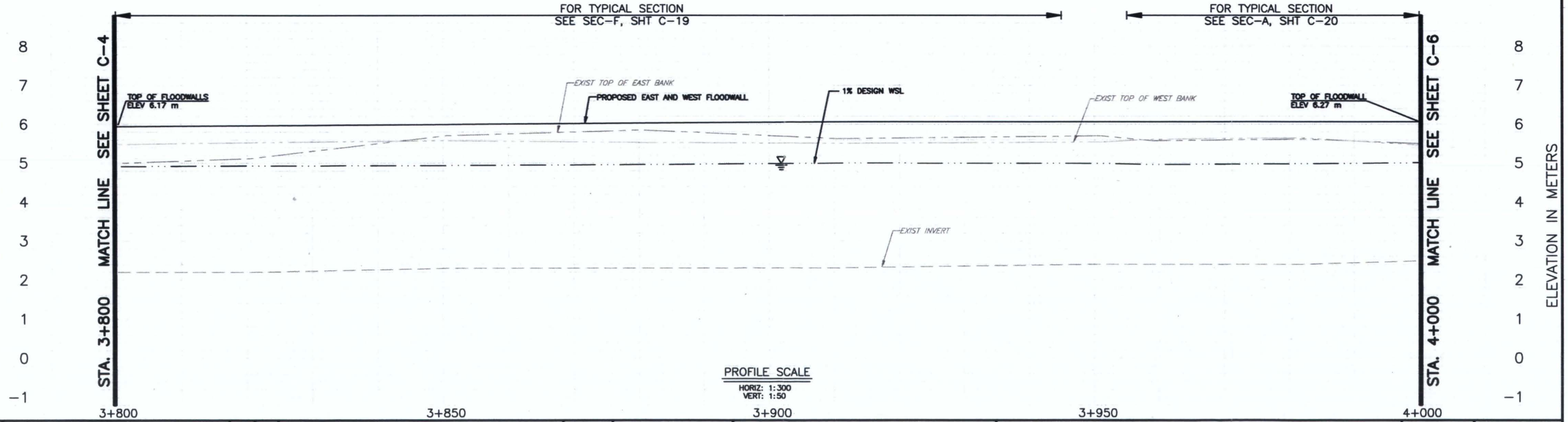
PROJECT NUMBER: 26244001

SHEET CODE: C-4



PLAN

SCALE 1:300


FOR TYPICAL SECTION SEE SEC-F, SHT C-19
FOR TYPICAL SECTION SEE SEC-A, SHT C-20
ELEVATION IN METERS
8
7
6
5
4
3
2
1
0
−1
STA. 3+800 MATCH LINE SEE SHEET C-4
STA. 4+000 MATCH LINE SEE SHEET C-6
TOP OF FLOODWALLS ELEV 6.17 m
EXIST TOP OF EAST BANK
PROPOSED EAST AND WEST FLOODWALL
1% DESIGN WSL
EXIST TOP OF WEST BANK
TOP OF FLOODWALL ELEV 6.27 m
EXIST INVERT
3+800
3+850
3+900
3+950
4+000

PROFILE SCALE

HORIZ: 1:300
VERT: 1:50

DOCUMENT NUMBER: XXXX-X-0000-0000000.00

REV	DESCRIPTION	DATE	APPR.	REFERENCE INFORMATION AND NOTES
				1. DESIGN 1% FLOWRATE IS 34.0 CMS

DATE
OCT. 2008
DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION

PROJECT ENGINEER MM-DD-YY

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK FLOOD PROTECTION PROJECT

SOIL BORING SITE PLAN

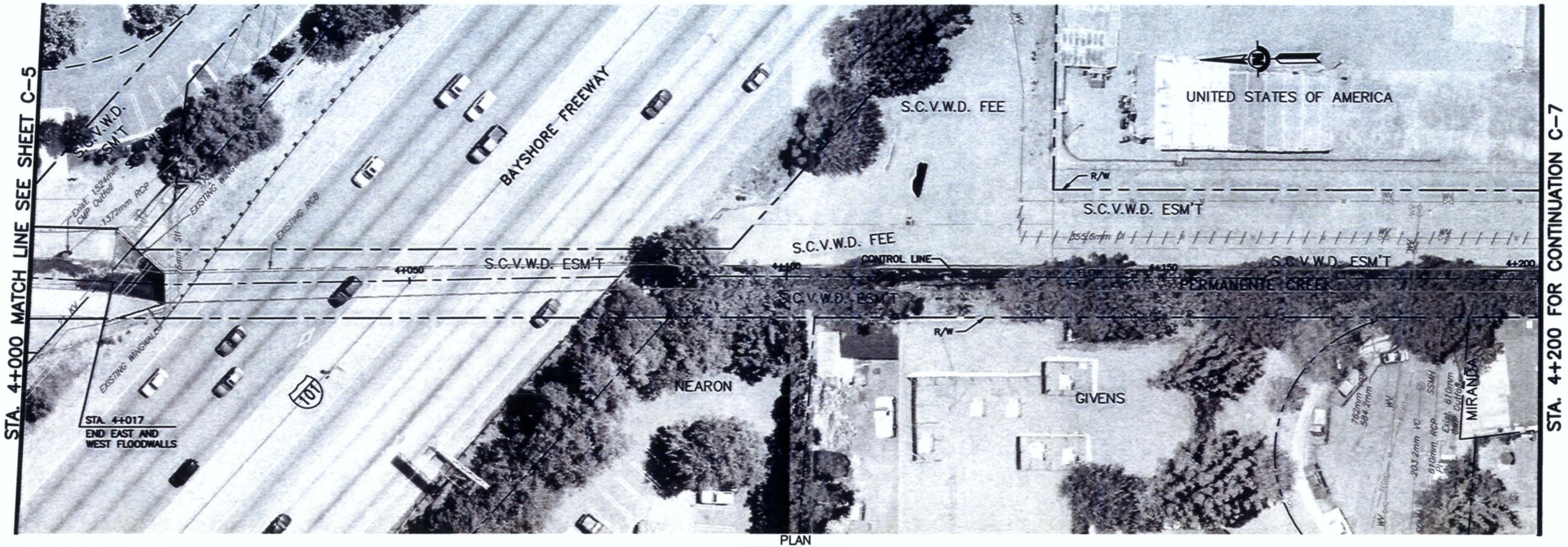
SCALE
AS SHOWN

VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

PROJECT NUMBER
26244001

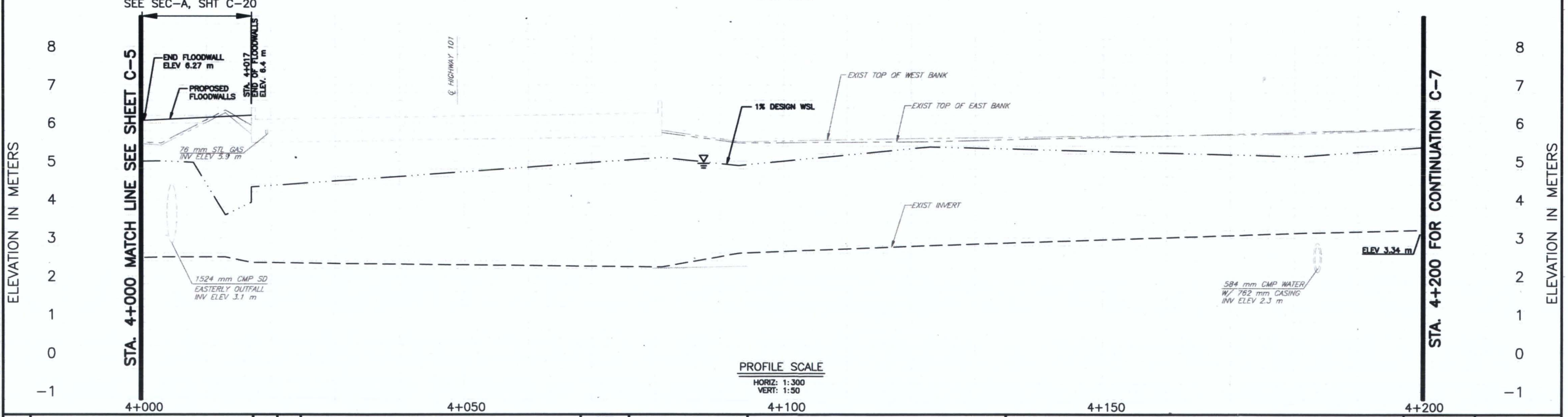
SHEET CODE:
C-5

PAGE NUMBER:
11 OF 28



PLAN

SCALE 1:300


FOR TYPICAL SECTION SEE SEC-A, SHT C-20
ELEVATION IN METERS
8
7
6
5
4
3
2
1
0
−1
STA. 4+000 MATCH LINE SEE SHEET C-5
END FLOODWALL ELEV 6.27 m
PROPOSED FLOODWALLS
STA. 4+017 END OF FLOODWALLS ELEV. 6.4 m
76 mm STL GAS INV ELEV 5.9 m
1524 mm CMP SD EASTERLY OUTFALL INV ELEV 3.1 m
℄ HIGHWAY 101
1% DESIGN WSL
EXIST TOP OF WEST BANK
EXIST TOP OF EAST BANK
EXIST INVERT
584 mm CMP WATER W/ 762 mm CASING INV ELEV 2.3 m
ELEV 3.34 m
STA. 4+200 FOR CONTINUATION C-7
4+000
4+050
4+100
4+150
4+200

PROFILE SCALE

HORIZ: 1:300
VERT: 1:50

REV	DESCRIPTION	DATE	APPR.	REFERENCE INFORMATION AND NOTES	DATE	ENGINEERING CERTIFICATION
				1. DESIGN 1% FLOWRATE IS 31.2 CMS	OCT. 2008	
					DESIGN	
					DRAWN	
					CHECKED	PROJECT ENGINEER DATE

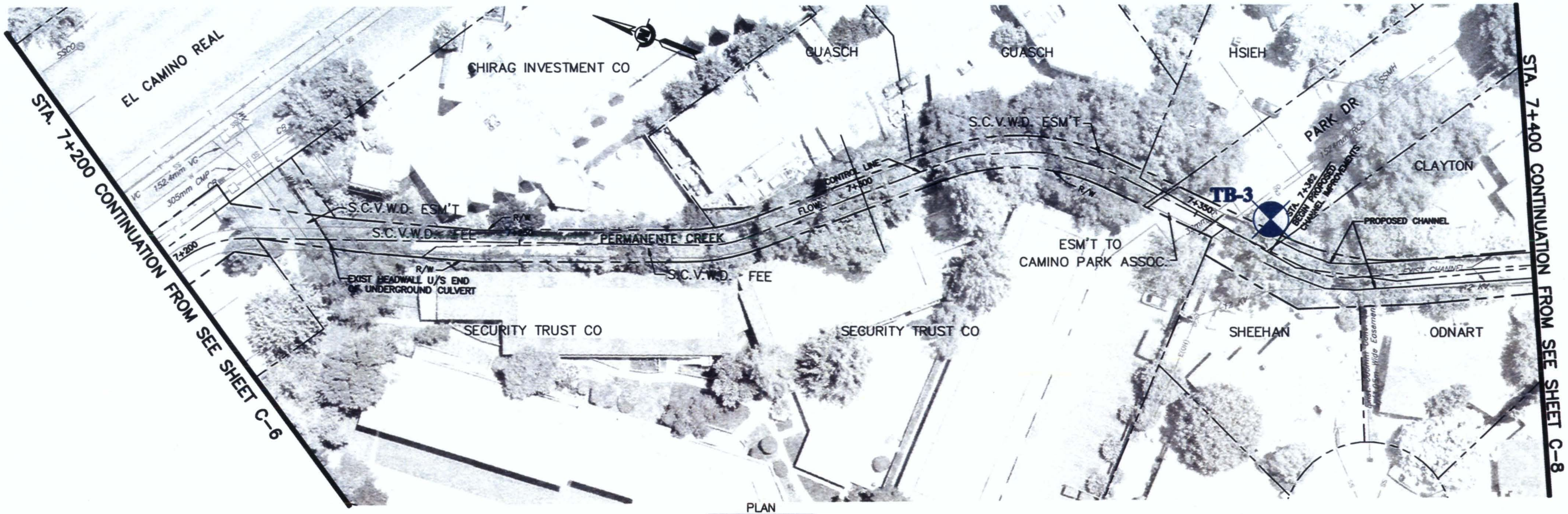
Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

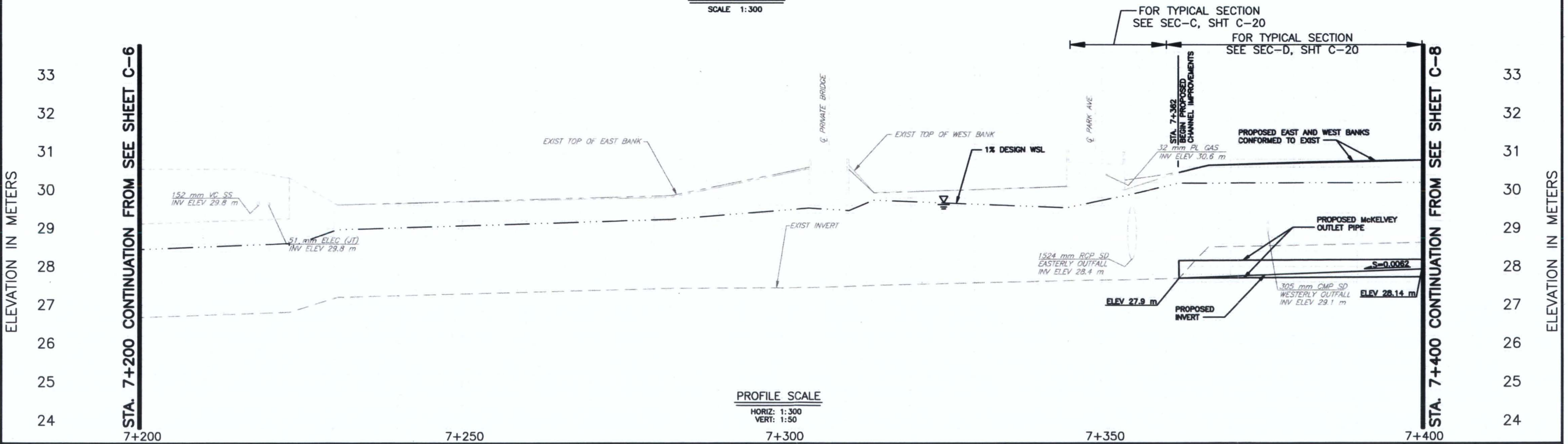
PERMANENTE CREEK FLOOD PROTECTION PROJECT

PERMANENTE CREEK SOIL BORING SITE PLAN

SCALE	PROJECT NUMBER
AS SHOWN	26244001
VERIFY SCALES 0 25 BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY	SHEET CODE: C−6 PAGE NUMBER: 12 OF 28



PLAN
SCALE 1:300


FOR TYPICAL SECTION SEE SEC-C, SHT C-20
FOR TYPICAL SECTION SEE SEC-D, SHT C-20
ELEVATION IN METERS
33
32
31
30
29
28
27
26
25
24
STA. 7+200 CONTINUATION FROM SEE SHEET C-6
STA. 7+400 CONTINUATION FROM SEE SHEET C-8
℄ PRIVATE BRIDGE
℄ PARK AVE
STA. 7+362 BEGIN PROPOSED CHANNEL IMPROVEMENTS
EXIST TOP OF EAST BANK
EXIST TOP OF WEST BANK
1% DESIGN WSL
32 mm PL GAS INV ELEV 30.6 m
PROPOSED EAST AND WEST BANKS CONFORMED TO EXIST
152 mm VC SS INV ELEV 29.8 m
51 mm ELEC (JT) INV ELEV 29.8 m
EXIST INVERT
1524 mm RCP SD EASTERLY OUTFALL INV ELEV 28.4 m
PROPOSED McKELVEY OUTLET PIPE
S=0.0062
ELEV 27.9 m
PROPOSED INVERT
305 mm CMP SD WESTERLY OUTFALL INV ELEV 29.1 m
ELEV 28.14 m
PROFILE SCALE
HORIZ: 1:300
VERT: 1:50
7+200
7+250
7+300
7+350
7+400

DOCUMENT NUMBER: XXXX-X-0000-0000000.00

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES
1. DESIGN 1% FLOWRATE IS 25.5 CMS

DATE
OCT. 2008
DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION
PROJECT ENGINEER DATE

Santa Clara Valley Water District

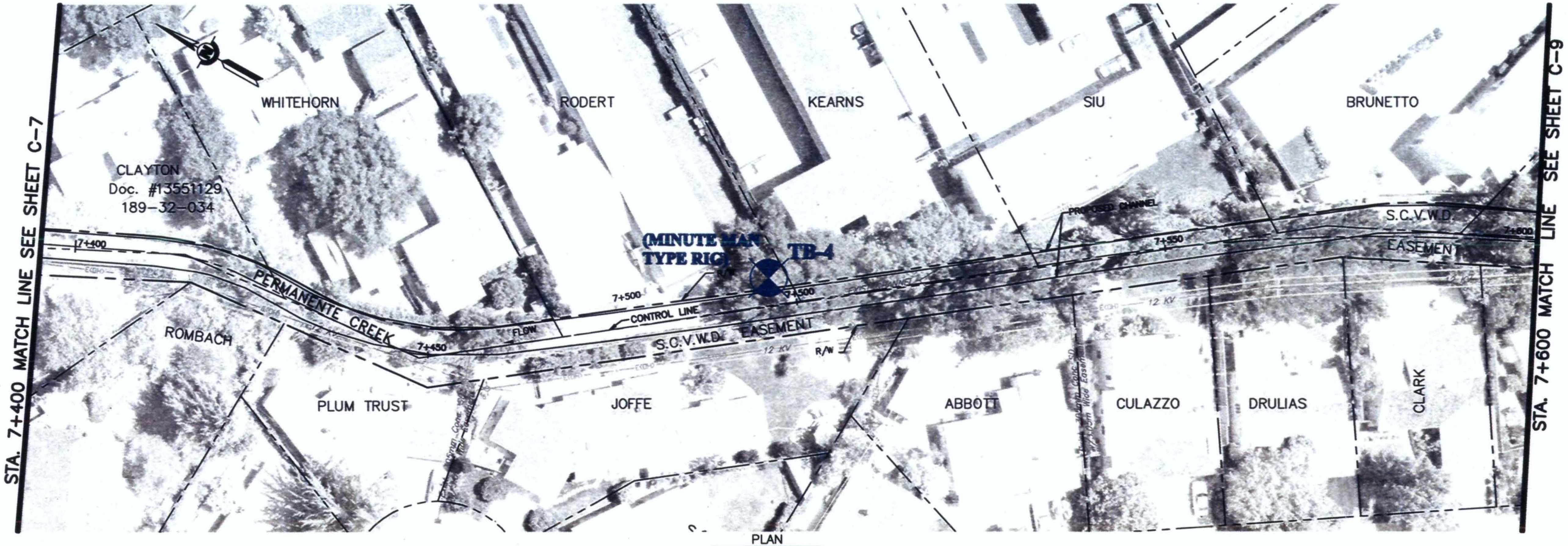
PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK FLOOD PROTECTION PROJECT

SOIL BORING SITE PLAN

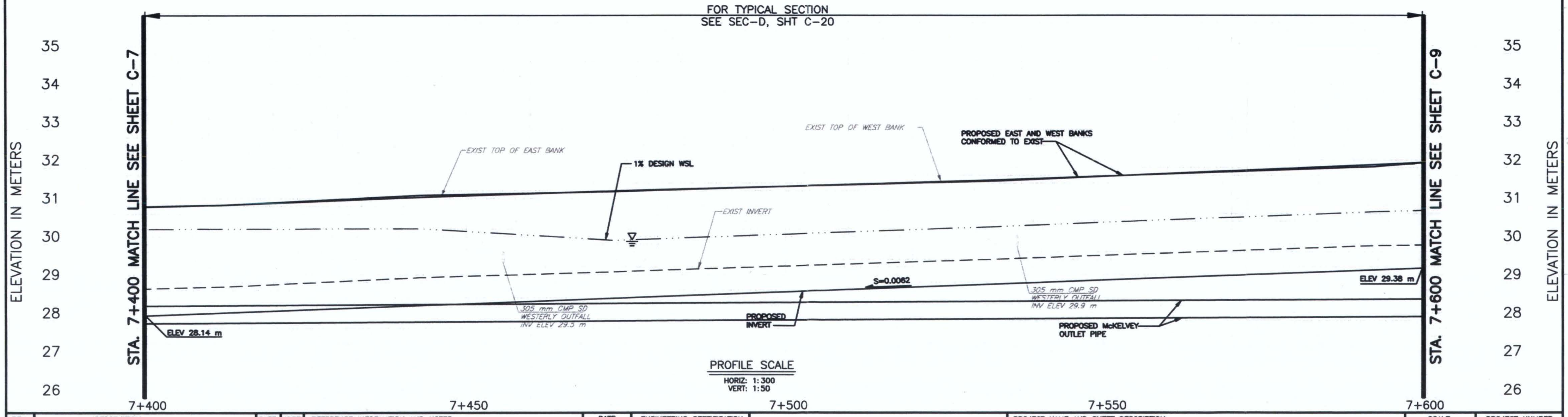
SCALE
AS SHOWN
VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

PROJECT NUMBER
26244001
SHEET CODE:
C-7
PAGE NUMBER:
13 OF 28



PLAN
SCALE 1:300

FOR TYPICAL SECTION
SEE SEC-D, SHT C-20



PROFILE SCALE
HORIZ: 1:300
VERT: 1:50

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES
1. DESIGN 1% FLOWRATE IS 25.5 CMS

DATE
OCT. 2008
DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION
PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK
FLOOD PROTECTION PROJECT

SOIL BORING SITE PLAN

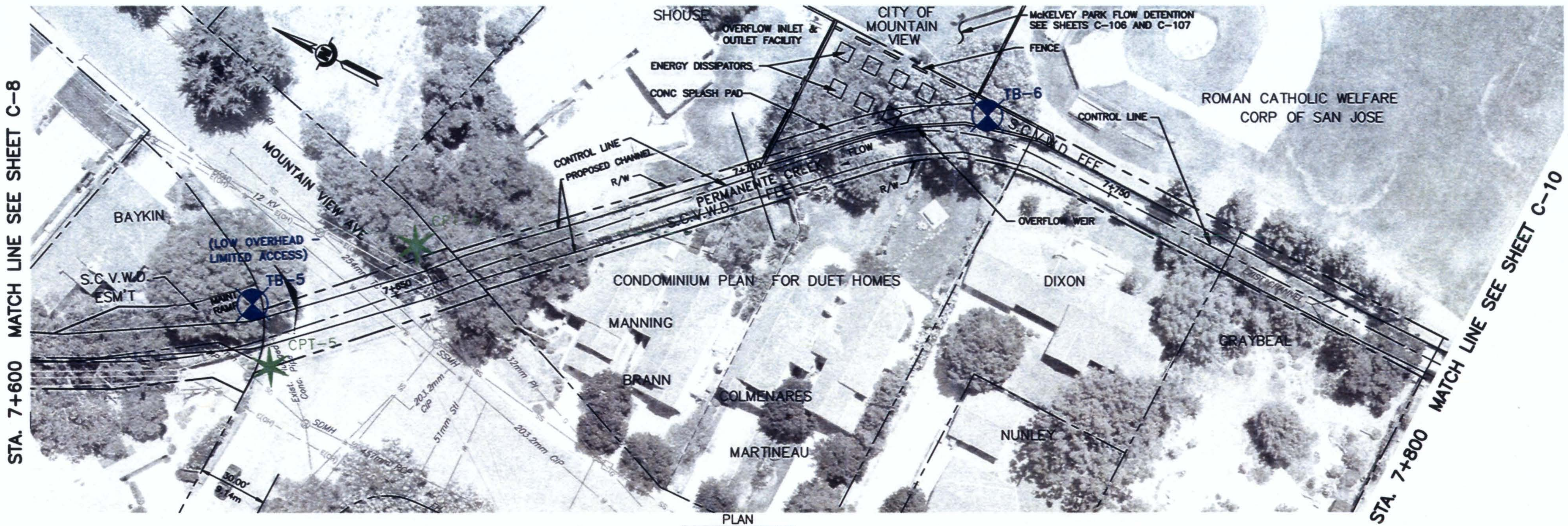
SCALE
AS SHOWN

VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

PROJECT NUMBER
26244001

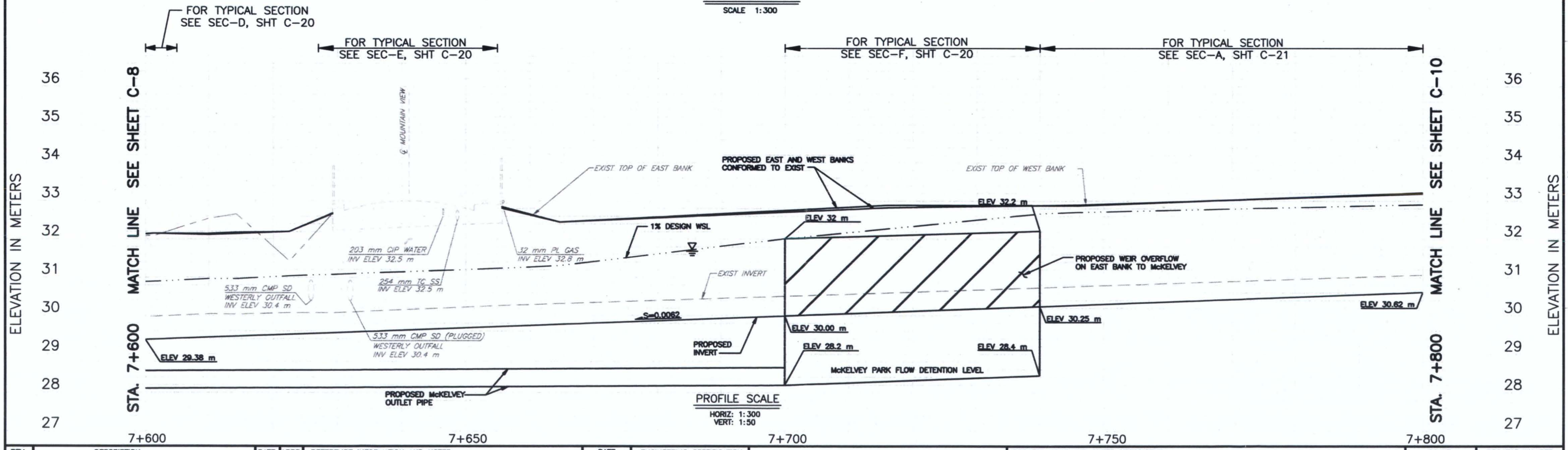
SHEET CODE:
C-8

PAGE NUMBER:
14 OF 28



PLAN

SCALE 1:300


FOR TYPICAL SECTION SEE SEC-D, SHT C-20
FOR TYPICAL SECTION SEE SEC-E, SHT C-20
FOR TYPICAL SECTION SEE SEC-F, SHT C-20
FOR TYPICAL SECTION SEE SEC-A, SHT C-21
ELEVATION IN METERS
36
35
34
33
32
31
30
29
28
27
STA. 7+600 MATCH LINE SEE SHEET C-8
STA. 7+800 MATCH LINE SEE SHEET C-10
℄ MOUNTAIN VIEW
EXIST TOP OF EAST BANK
PROPOSED EAST AND WEST BANKS CONFORMED TO EXIST
EXIST TOP OF WEST BANK
ELEV 32.2 m
ELEV 32 m
1% DESIGN WSL
203 mm CIP WATER INV ELEV 32.5 m
32 mm PL GAS INV ELEV 32.8 m
254 mm TC SS INV ELEV 32.5 m
533 mm CMP SD WESTERLY OUTFALL INV ELEV 30.4 m
EXIST INVERT
PROPOSED WEIR OVERFLOW ON EAST BANK TO McKELVEY
S=0.0062
ELEV 30.62 m
ELEV 30.25 m
ELEV 30.00 m
533 mm CMP SD (PLUGGED) WESTERLY OUTFALL INV ELEV 30.4 m
PROPOSED INVERT
ELEV 28.2 m
ELEV 28.4 m
ELEV 29.38 m
McKELVEY PARK FLOW DETENTION LEVEL
PROPOSED McKELVEY OUTLET PIPE
7+600
7+650
7+700
7+750
7+800

PROFILE SCALE

HORIZ: 1:300
VERT: 1:50

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. DESIGN 1% FLOWRATE IS 25.5 CMS DOWNSTREAM OF STA. 7+740 AND 36.8 CMS UPSTREAM OF STA 7+740.

DATE
OCT. 2008
DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK
FLOOD PROTECTION PROJECT

SOIL BORING SITE PLAN

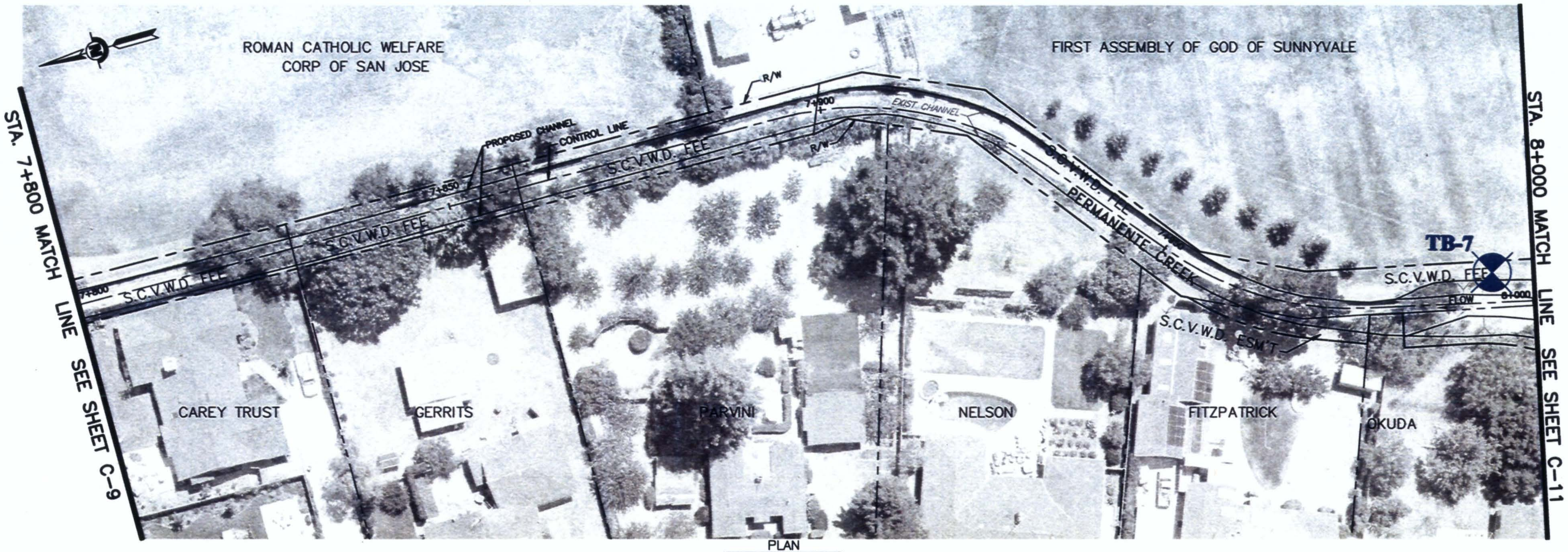
SCALE
AS SHOWN

VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

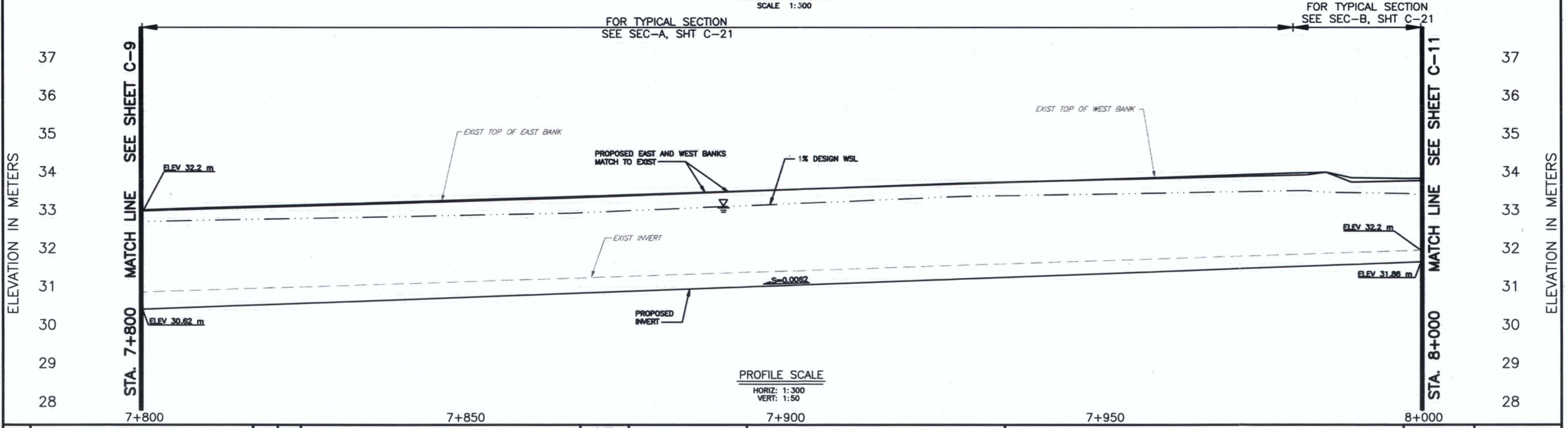
PROJECT NUMBER
26244001

SHEET CODE:
C-9

PAGE NUMBER:
15 OF 28



PLAN
SCALE 1:300



PROFILE SCALE
HORIZ: 1:300
VERT: 1:50

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES
1. DESIGN 1% FLOWRATE IS 36.8 CMS

DATE
OCT. 2008
DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION
PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK
FLOOD PROTECTION PROJECT

SOIL BORING SITE PLAN

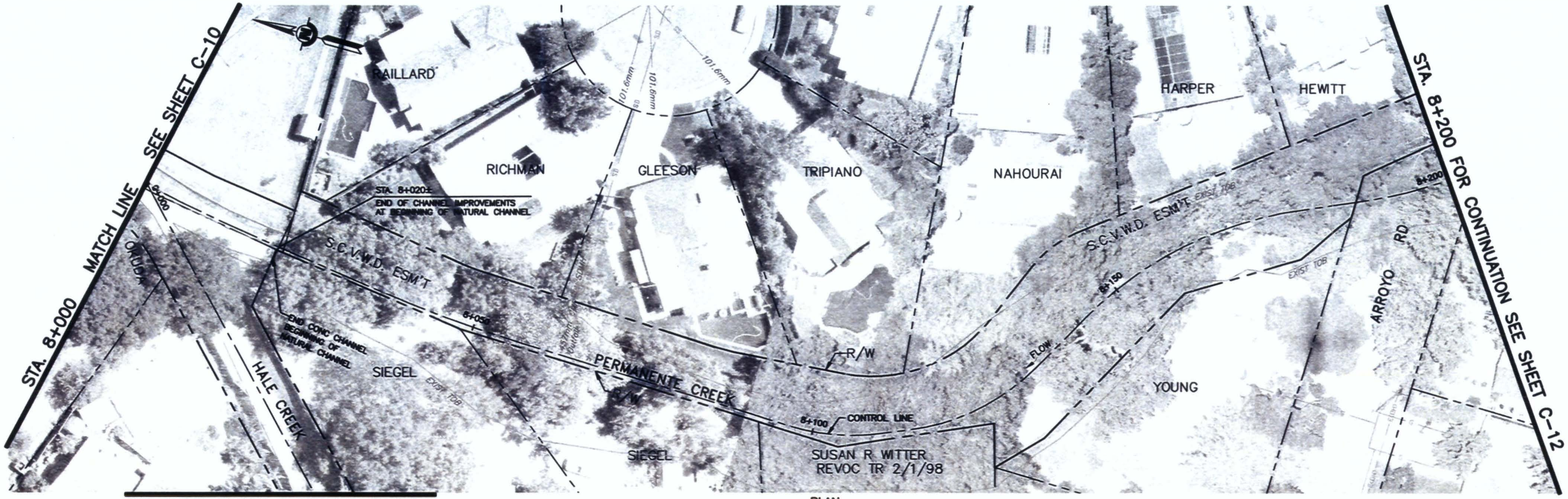
SCALE
AS SHOWN

VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

PROJECT NUMBER
26244001

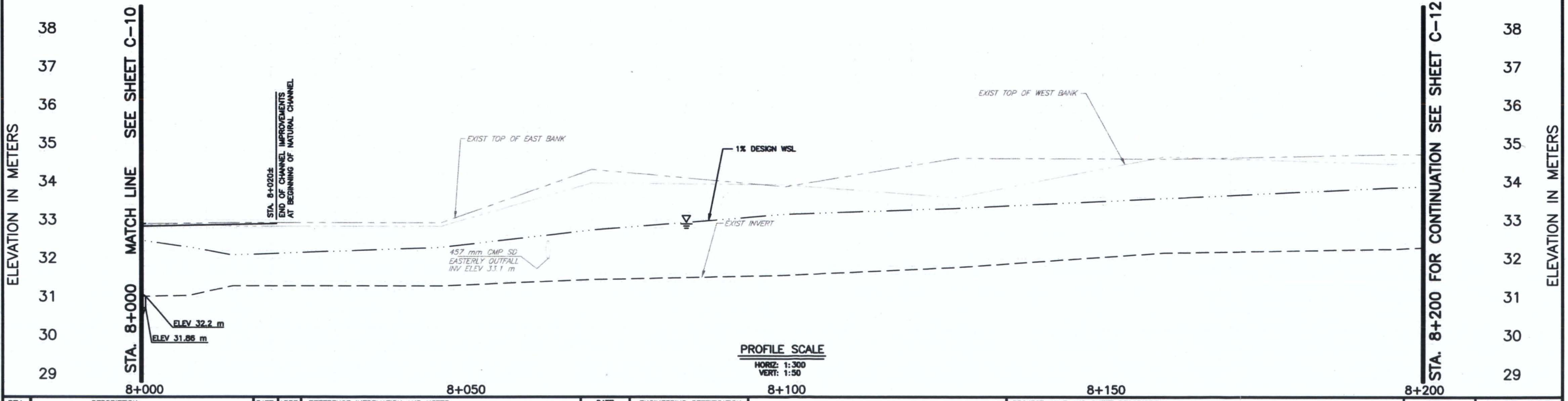
SHEET CODE:
C-10

PAGE NUMBER:
16 OF 28



FOR HALE CREEK PLAN AND PROFILE
SEE SHEET C-14

PLAN
SCALE 1:300



DOCUMENT NUMBER: XXXX-X-0000-0000000.00

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES
1. DESIGN 1% FLOWRATE IS 5.7 CMS

DATE OCT. 2008
DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION
PROJECT ENGINEER DATE

Santa Clara Valley Water District

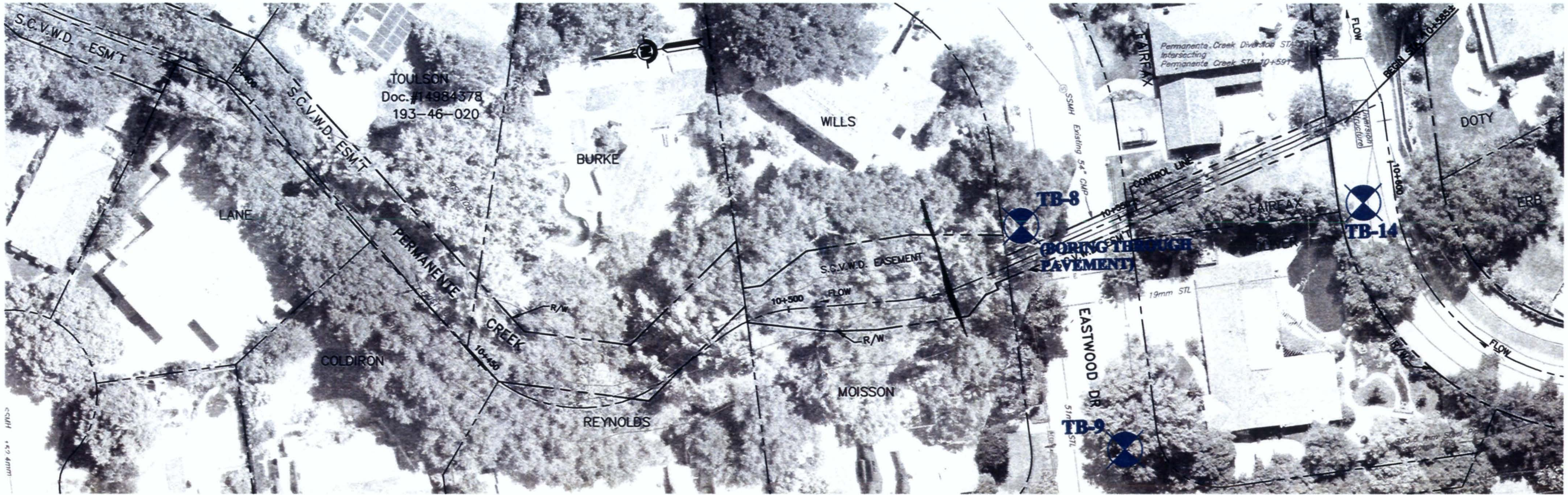
PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK FLOOD PROTECTION PROJECT

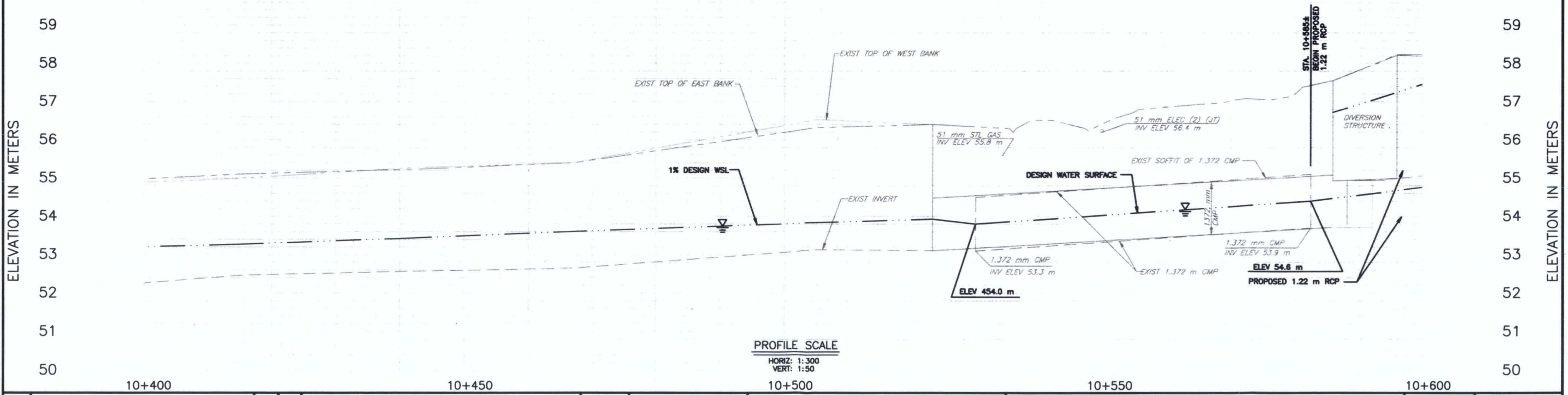
SOIL BORING SITE PLAN

SCALE
AS SHOWN
VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

PROJECT NUMBER
26244001
SHEET CODE:
C-11
PAGE NUMBER:
17 OF 28



PLAN
PLAN SCALE 1:300



PROFILE SCALE
HORIZ: 1:300
VERT: 1:50

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES
1. DESIGN 1% FLOWRATE IS 2.8 CMS

DATE: OCT. 2008
DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION
PROJECT ENGINEER DATE

Santa Clara Valley Water District

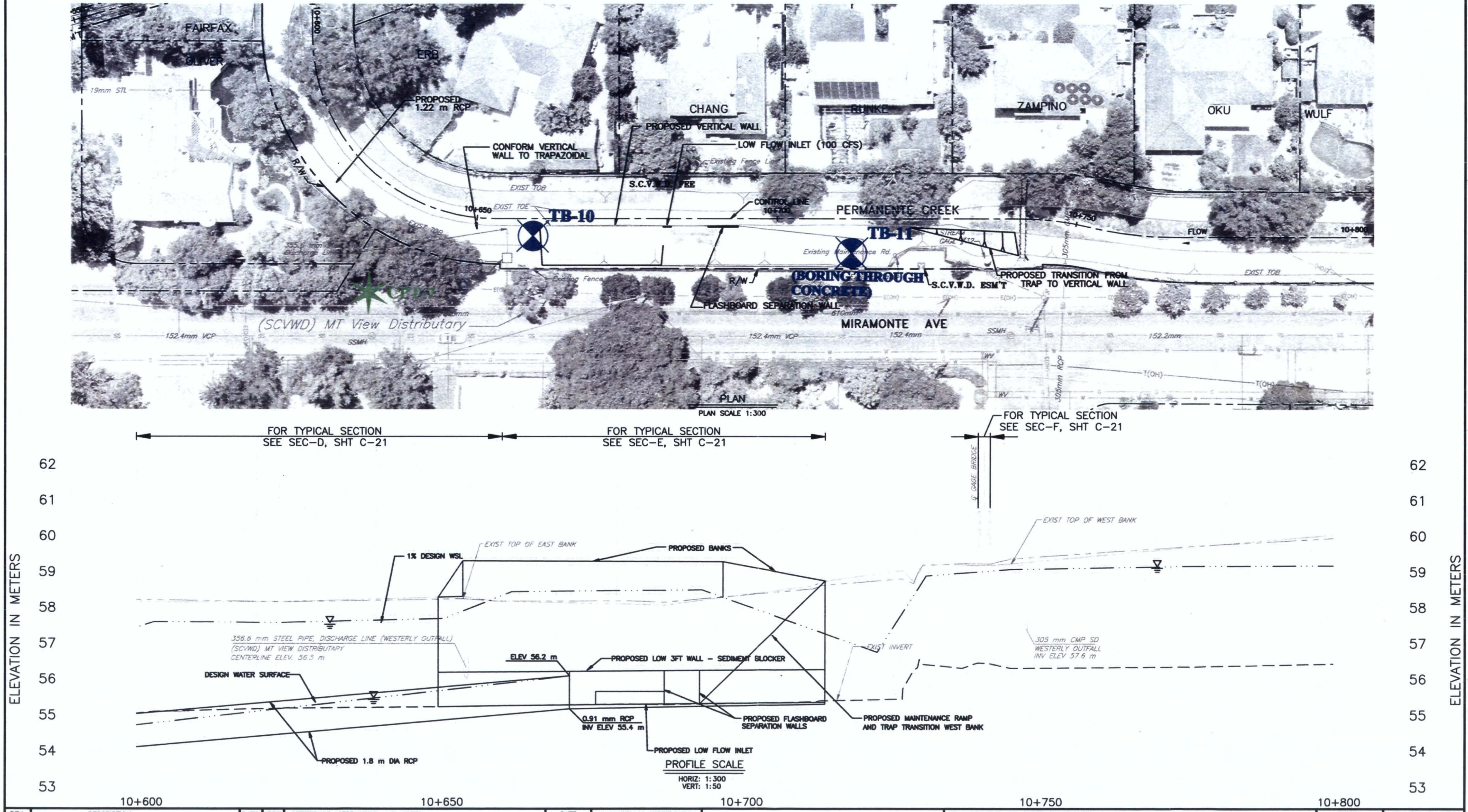
PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK
FLOOD PROTECTION PROJECT

SOIL BORING SITE PLAN

SCALE: AS SHOWN
VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

PROJECT NUMBER: 26244001
SHEET CODE: C-12
PAGE NUMBER: 18 OF 28



REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

1. DESIGN 1% FLOWRATE IS 2.8 CMS DOWNSTREAM OF STA. 10+715
   DESIGN 1% FLOWRATE IS 56.7 CMS UPSTREAM OF STA. 10+715
   DESIGN 1% FLOWRATE TO PERMANENTE DIVERSION IS 53.8 CMS

DATE
OCT. 2008
DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK
FLOOD PROTECTION PROJECT

SOIL BORING SITE PLAN

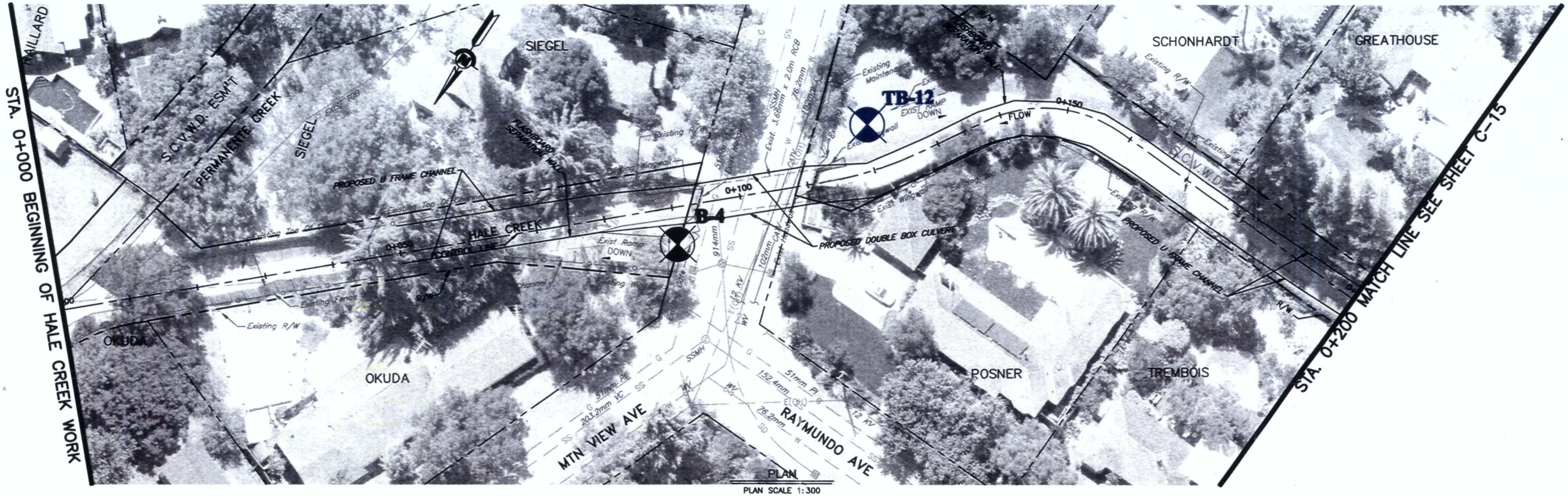
SCALE
AS SHOWN

VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

PROJECT NUMBER
26244001

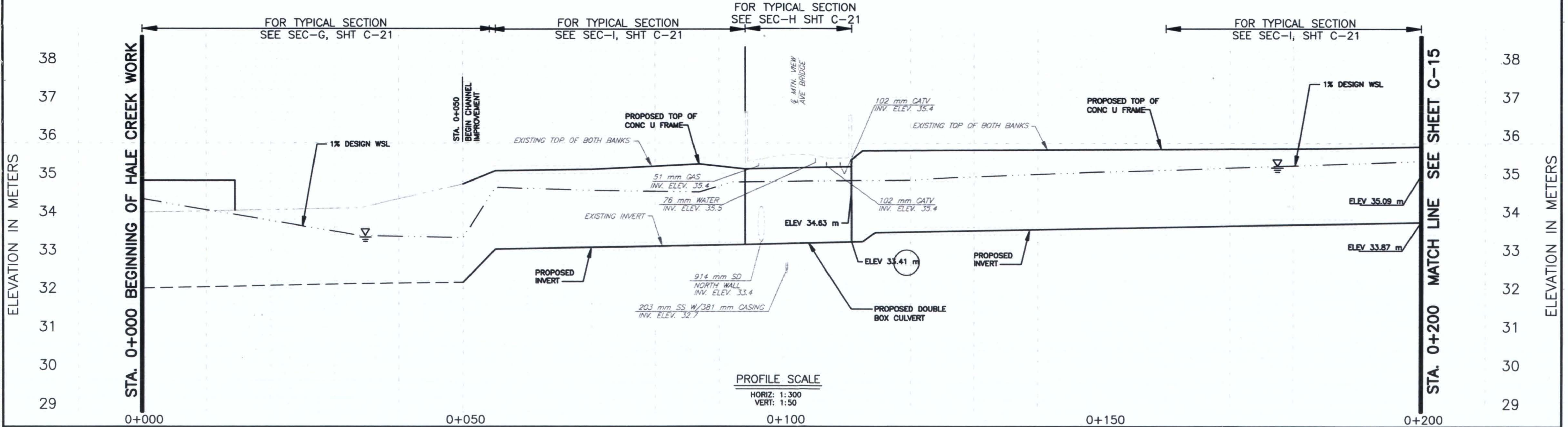
SHEET CODE:
C-13

PAGE NUMBER:
19 OF 28



PLAN

PLAN SCALE 1:300


FOR TYPICAL SECTION SEE SEC-G, SHT C-21
FOR TYPICAL SECTION SEE SEC-I, SHT C-21
FOR TYPICAL SECTION SEE SEC-H SHT C-21
FOR TYPICAL SECTION SEE SEC-I, SHT C-21
STA. 0+000 BEGINNING OF HALE CREEK WORK
STA. 0+050 BEGIN CHANNEL IMPROVEMENT
℄ MTN. VIEW AVE BRIDGE
STA. 0+200 MATCH LINE SEE SHEET C-15
1% DESIGN WSL
EXISTING TOP OF BOTH BANKS
PROPOSED TOP OF CONC U FRAME
51 mm GAS INV. ELEV. 35.4
76 mm WATER INV. ELEV. 35.5
EXISTING INVERT
PROPOSED INVERT
914 mm SD NORTH WALL INV. ELEV. 33.4
203 mm SS W/381 mm CASING INV. ELEV. 32.7
102 mm CATV INV. ELEV. 35.4
ELEV 34.63 m
ELEV 33.41 m
PROPOSED DOUBLE BOX CULVERT
ELEV 35.09 m
ELEV 33.87 m
ELEVATION IN METERS
29
30
31
32
33
34
35
36
37
38
0+000
0+050
0+100
0+150
0+200
PROFILE SCALE
HORIZ: 1:300
VERT: 1:50

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES
1. DESIGN 1% FLOWRATE IS 31.2 CMS

DATE
OCT. 2008
DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION
PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK
FLOOD PROTECTION PROJECT

HALE CREEK
SOIL BORING SITE PLAN

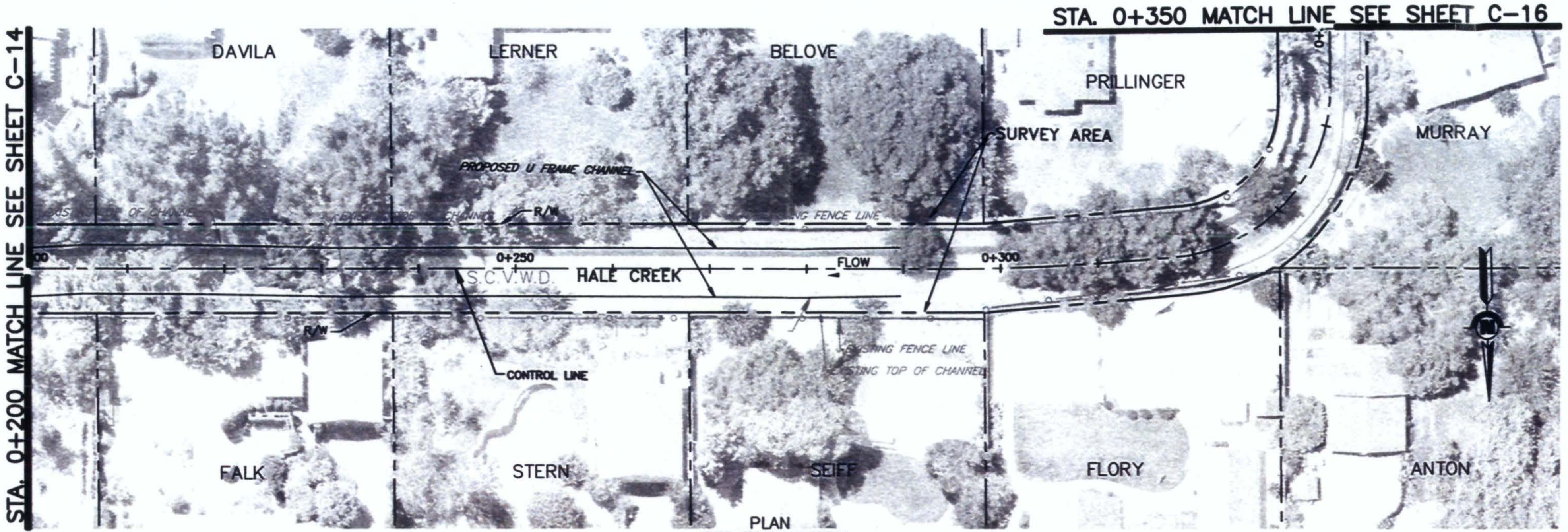
SCALE
AS SHOWN

VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

PROJECT NUMBER
26244001

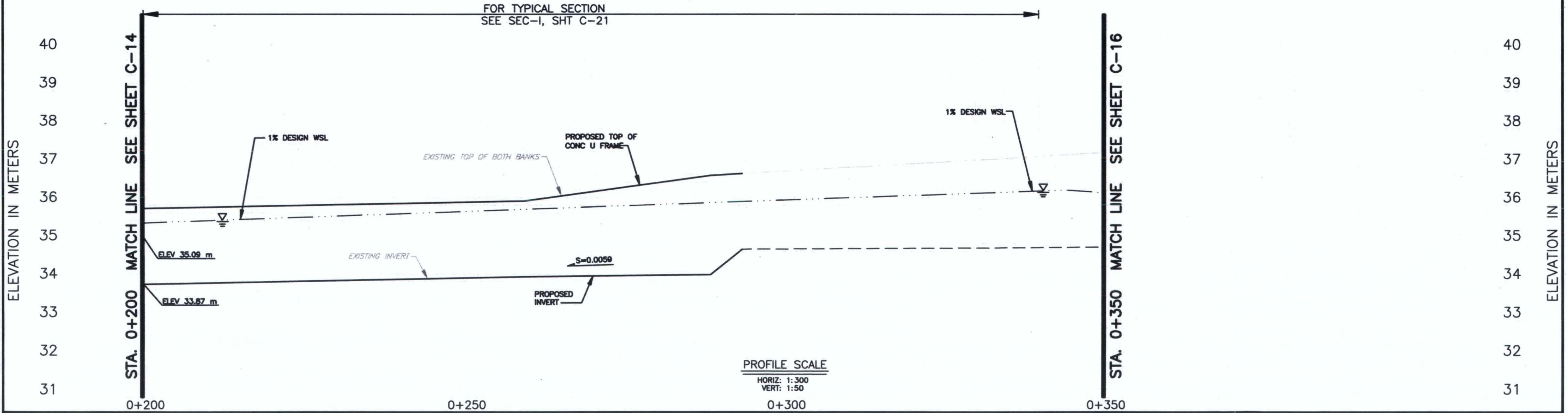
SHEET CODE:
C-14

PAGE NUMBER:
20 OF 28



PLAN

PLAN SCALE 1:300



REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES
1. DESIGN 1% FLOWRATE IS 31.2 CMS

DATE
OCT. 2008
DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION

PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK FLOOD PROTECTION PROJECT

HALE CREEK SOIL BORING SITE PLAN

SCALE
AS SHOWN

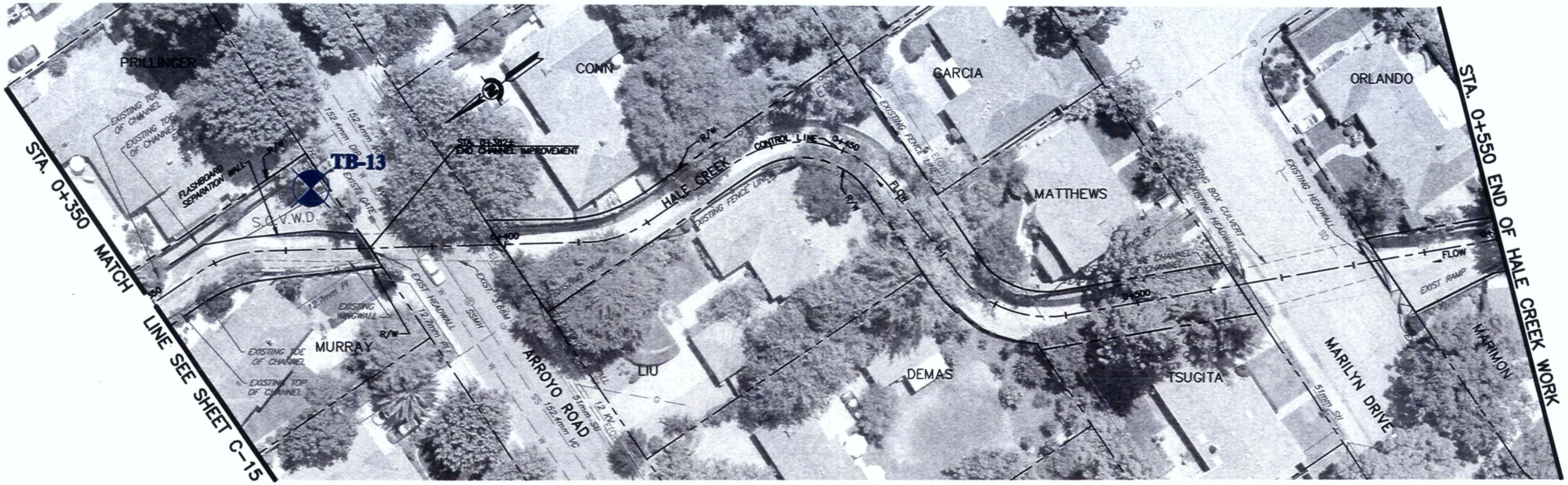
VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

PROJECT NUMBER
26244001

SHEET CODE:
C-15

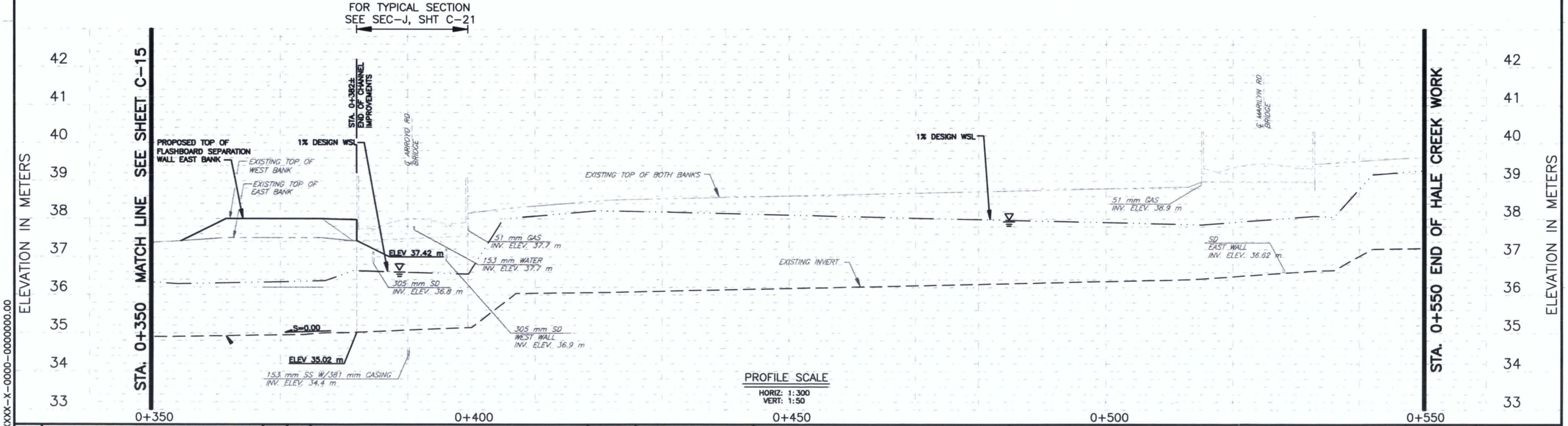
PAGE NUMBER:
21 OF 28

DOCUMENT NUMBER: XXXX-X-0000-0000000.00



PLAN

PLAN SCALE 1:300


FOR TYPICAL SECTION SEE SEC-J, SHT C-21
ELEVATION IN METERS
42
41
40
39
38
37
36
35
34
33
STA. 0+350 MATCH LINE SEE SHEET C-15
STA. 0+382± END OF CHANNEL IMPROVEMENTS
℄ ARROYO RD BRIDGE
℄ MARILYN RD BRIDGE
STA. 0+550 END OF HALE CREEK WORK
PROPOSED TOP OF FLASHBOARD SEPARATION WALL EAST BANK
EXISTING TOP OF WEST BANK
EXISTING TOP OF EAST BANK
1% DESIGN WSL
ELEV 37.42 m
305 mm SD INV. ELEV. 36.8 m
51 mm GAS INV. ELEV. 37.7 m
153 mm WATER INV. ELEV. 37.7 m
305 mm SD WEST WALL INV. ELEV. 36.9 m
S=0.00
ELEV 35.02 m
153 mm SS W/381 mm CASING INV. ELEV. 34.4 m
EXISTING TOP OF BOTH BANKS
EXISTING INVERT
51 mm GAS INV. ELEV. 38.9 m
SD EAST WALL INV. ELEV. 36.62 m
0+350
0+400
0+450
0+500
0+550

PROFILE SCALE

HORIZ: 1:300
VERT: 1:50

REV	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES
1. DESIGN 1% FLOWRATE IS 31.2 CMS

DATE: OCT. 2008
DESIGN
DRAWN
CHECKED

ENGINEERING CERTIFICATION
PROJECT ENGINEER DATE

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

PERMANENTE CREEK
FLOOD PROTECTION PROJECT

HALE CREEK
SOIL BORING SITE PLAN

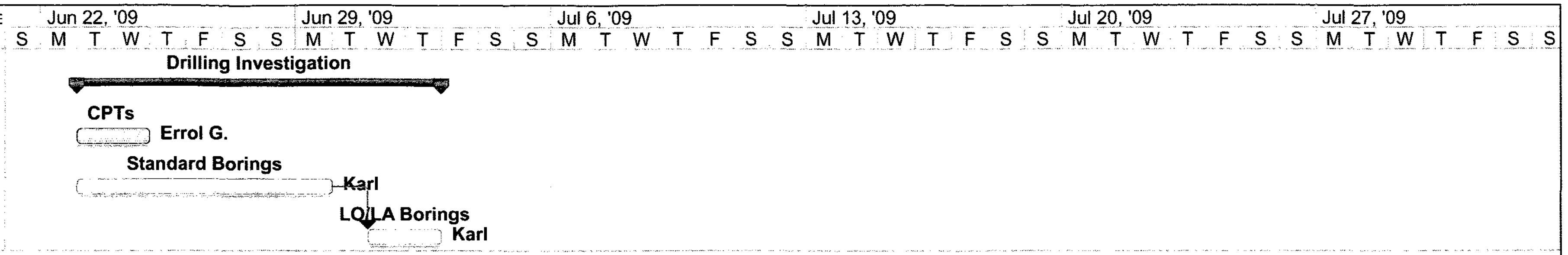
SCALE: AS SHOWN
VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

PROJECT NUMBER: 26244001
SHEET CODE: C-16

APPENDIX B

FIELD INVESTIGATION SCHEDULE, ORGANIZATION CHART, AND CONTACT INFORMATION OF DISTRICT FIELD STAFF AND AGENCY CONTACTS

ID	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1	**Drilling Investigation**	**8 days?**	**Tue 6/23/09**	**Thu 7/2/09**		
2	Perform CPTs	2 days?	Tue 6/23/09	Wed 6/24/09		Errol G.
3	Drill Standard Borings	5 days	Tue 6/23/09	Mon 6/29/09		Karl
4	Drill Low Overhead/Limited Access Borings	2 days	Wed 7/1/09	Thu 7/2/09	3	Karl

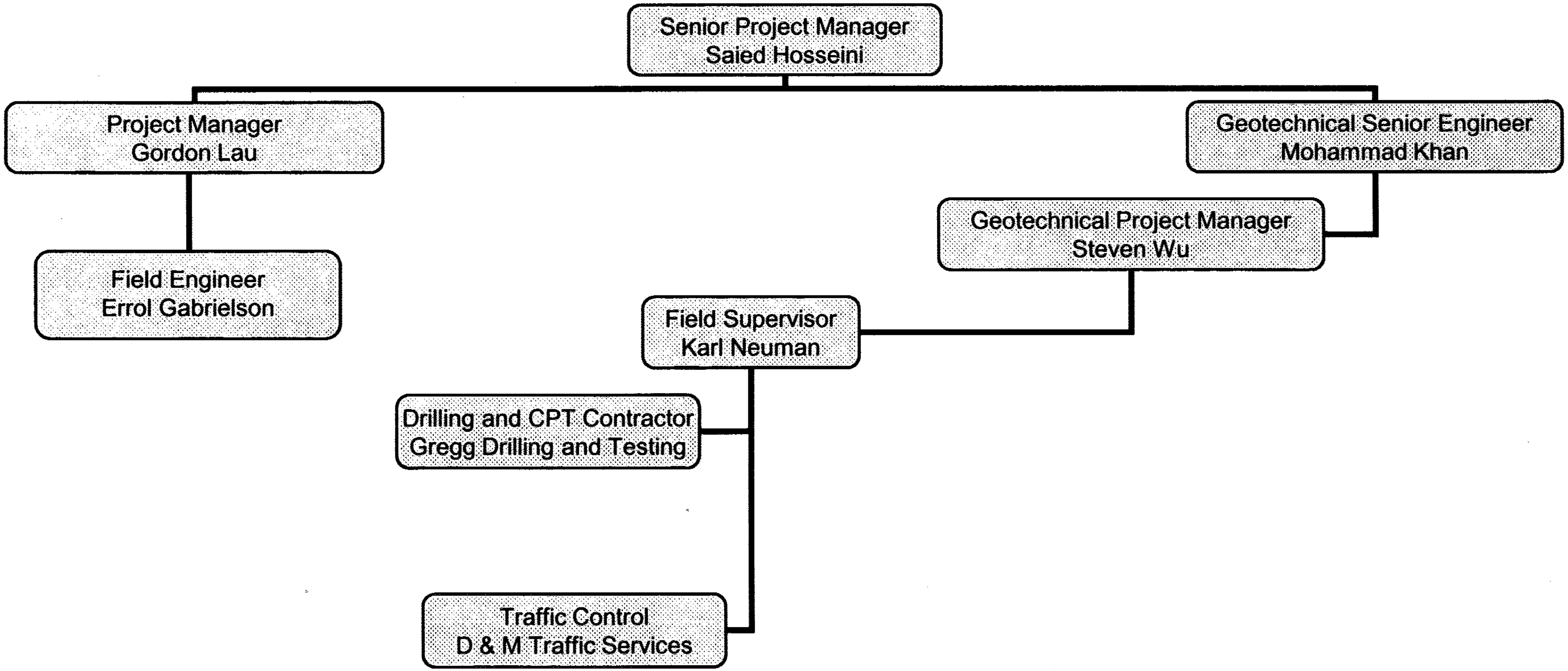


Project: Permanente Creek
Date: Wed 6/3/09

Task	▭	Progress	▬	Summary	▬	External Tasks	▭
Split		Milestone	◆	Project Summary	▭	External MileTask	◇
Split							

Functional Organization During Field Investigation

Project: Permanente Creek Flood Protection Project (PCFPP)
Project No. 10244001-1211



Permanente Creek Flood Protection Project

Phone Directory of District Field Staff & Agency Contacts

NAME	TITLE	ROLE	PHONE NUMBER
Mike Munson	Engineering Unit Manager	Project Management Support	Ext. 2926
Mohammad Khan	Senior Engineer (Geotechnical)	Quality Control Reviewer	Ext. 2734
Steven Wu	Associate Engineer (Geotechnical)	Geotechnical Project Manager	Ext. 2987
Karl Neuman	Assistant Engineer (Geotechnical)	Project Engineer and Field Supervisor	Ext. 3059 Cell # (408) 687-9638
Saied Hosseini	Senior Project Manager	Senior Project Manager (Design Team)	Ext. 2680
Gordon Lau	Associate Engineer	Project Manager (Design Team)	Ext. 2686
Errol Gabrielson	Assistant Engineer	Project and Field Engineer (Design Team	Ext. 3061
Michelle Bocalan	Assistant Engineer Public Works	Agency contact from the City of Los Altos	(650) 947-2602
Los Altos Police Dept.	Police Dept.	Notify 3 days in advance for CPT-7, TB-8 and TB-9	(650) 947-2770
Santa Clara County Fire Dept.	Fire Dept.	Notify 3 days in advance for CPT-7, TB-8 and TB-9	(408) 378-4010
Quynh Byrer	Public Works Engineer	Agency contact from the City of Mountain View	(650) 903-6631
John Marchant	Recreation Supervisor	Notify 48 hours prior to performing CPT-2	(650) 903-6076
Gary Shouse	Property Owner 935 Mountain View Ave.	Provide access to Boring TB-6	(650) 965-1174
Carl Rodert	Property Owner 1349 Park Dr.	Provide access to Boring TB-4	(408) 257-2607
Chris Pruner	Drilling Manager Gregg Drilling and Testing	General drilling contractor	(925) 313-5800
Terri Rodgers	Dispatcher D&M Traffic Services	Traffic control contractor	(408) 436-1127 Cell # (408) 591-2690
Jay Jamali	Owner EnviroSafetech	Health and safety consultant	Office # (408) 943-9090 Cell # (408) 623-2737

APPENDIX C

BEST MANAGEMENT PRACTICES

Attachment C - Best Management Practices

While analysis has shown that the proposed project is categorically exempt and there is minimal potential for impact, it is standard District practice to incorporate Best Management Practices (BMPs) into all projects to protect natural resources. The following BMPs apply to the proposed project.

AIR QUALITY		
AQ-1	**Bay Area Air Quality Management District Basic Dust Control Measures (all construction sites)**	Implement Bay Area Air Quality Management District (BAAQMD) Basic Control Measures for construction emissions of PM_{10} at all construction sites. Current measures stipulated by the BAAQMD CEQA Guidelines include the following (BAAQMD 1999): 1. Active areas shall be watered at least twice per day unless soils are already sufficiently moist to avoid dust. The amount of water must be controlled so that runoff from the site does not occur, yet dust control is achieved. 2. Unpaved access roads, parking areas and staging areas at project sites shall be watered three times daily, or non-toxic soil stabilizers shall be applied to control dust generation. 3. Paved site access roads, parking areas, and staging areas shall be swept daily (with vacuum-powered street sweepers). 4. Paved public streets shall be swept (with vacuum-powered street sweepers) if visible soil material is carried onto adjacent paved surfaces.
		Source: BAAQMD CEQA Guidelines
BIOLOGICAL RESOURCES		
BI-8	**Migratory Bird Surveys**	Migratory bird surveys will be performed prior to any project-related activity that could pose the potential to affect migratory birds. Inactive bird nests may be removed, with the exception of raptor nests. No birds, nests with eggs, or nests with hatchlings will be disturbed.
		Source: District Special Provisions Guidelines Article 13.15.01
HAZARDS AND HAZARDOUS MATERIALS		
HM-10	**Vehicle and Equipment Fueling**	No fueling will be done in a waterway or immediate flood plain, unless equipment stationed in these locations is not readily relocated (i.e., pumps, generators). 1. For stationary equipment that must be fueled on-site, containment will be provided in such a manner that any accidental spill of fuel will not be able to enter the water or contaminate sediments that may come in contact with water. 2. Any equipment that is readily moved out of the waterway will not be fueled in the waterway or immediate flood plain. 3. All fueling done at the job site will provide containment to the degree that any spill will be unable to enter any waterway or damage riparian vegetation.
		Source: SMP Provision No. 6.4

HAZARDS AND HAZARDOUS MATERIALS (CONT.)		
HM-11	**Vehicle and Equipment Maintenance**	No equipment servicing will be done in a stream channel or immediate flood plain, unless equipment stationed in these locations cannot be readily relocated (i.e., pumps, generators). 1. Any equipment that can be readily moved out of the channel will not be serviced in the channel or immediate flood plain. 2. All servicing of equipment done at the job site will provide containment to the degree that any spill will be unable to enter any channel or damage stream vegetation. 3. If emergency repairs are required in the field, only those repairs necessary to move equipment to a more secure location will be done in a channel or flood plain. 4. If emergency repairs are required, containment will be provided equivalent to that done for fueling or servicing.
		Source: SMP Provision No. 6.5
HM-12	**Hazardous Materials Management**	Measures will be implemented to ensure that hazardous materials are properly handled and the quality of water resources is protected by all reasonable means. 1. Prior to entering the work site, all field personnel will know how to respond when toxic materials are discovered. 2. The discharge of any hazardous or non-hazardous waste as defined in Division 2, Subdivision 1, Chapter 2 of the California Code of Regulations will be conducted in accordance with applicable State and federal regulations.
		Source: SMP Provision No. 6.3
HM-13	**Spill Prevention**	Prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water. 1. Field personnel will be appropriately trained in spill prevention, hazardous material control, and clean-up of accidental spills. 2. No fueling, repair, cleaning, maintenance, or vehicle washing will be performed in a creek channel or in areas at the top of a channel bank that may flow into a creek channel.
		Source: SMP Provision No. 6.1
HM-14	**Spill Kit Location**	Spill prevention kits will always be in close proximity when using hazardous materials (e.g., crew trucks and other logical locations). 1. Prior to entering the work site, all field personnel will know the location of spill kits on crew trucks and at other locations within District facilities. 2. All field personnel will be advised of these locations and trained in their appropriate use.
		Source: SMP Provision No. 6.2

HYDROLOGY AND WATER QUALITY		
WQ-4	**Handle Sediments so as to Minimize Water Quality Impacts**	Sediments will be stored and transported in a manner that minimizes water quality impacts. 1. Wet sediments may be stockpiled outside of a live stream or may be stockpiled within a dewatered stream so water can drain or evaporate before removal. 2. This measure applies to saturated, not damp, sediments and depends upon the availability of a stockpile site. 3. For those stockpiles located outside the channel, water draining from them will not be allowed to flow back into the creek or into local storm drains that enter the creek, unless water quality protection measures recommended by the RWQCB are implemented. 4. Trucks may be lined with an impervious material (e.g. plastic), or the tail gate blocked with dry dirt or hay bales, for example, or trucks may drain excess water by slightly tilting their loads and allowing the water to drain out. 5. Water will not drain directly into channels (outside of the work area) or onto public streets without providing water quality control measures. 6. Streets will be cleared of mud and/or dirt by street sweeping (with a vacuum-powered street sweeper), as necessary, and not by hosing down the street.
		Source: SMP Provision No. 1.8
WQ-5	**Soil Stockpiles**	If soil is to be stockpiled, no run-off will be allowed to flow to a creek.
		Source: SMP Provision No. 1.9
WQ-15	**Groundwater Management**	If high levels of groundwater in a work area are encountered, the water will be pumped out of the work site. If necessary to protect water quality, the water will be directed into specifically constructed infiltration basins, into holding ponds, or onto areas with vegetation to remove sediment prior to the water re-entering a receiving water body. Water pumped into vegetated areas will be pumped in a manner that will not create erosion around vegetation.
		Source: SMP Provision No. 1.12
WQ-18	**Site Maintenance and Cleanup**	The work site, areas adjacent to the work site, and access roads will be maintained in an orderly condition, free and clear from debris and discarded materials. Personnel will not sweep, grade, or flush surplus materials, rubbish, debris, or dust into storm drains or waterways. Upon completion of work, all building materials, debris, unused materials, concrete forms, and other construction-related materials will be removed from the work site.
		Source: District Special Provisions Guidelines Article 15.09
WQ-37	**Well or Exploratory Boring Materials Management**	All materials or waters generated during drilling, well or exploratory boring construction, well development, pump testing, or other activities associated with wells or exploratory borings, will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case will these materials and/or waters be allowed to enter, or potentially enter, on- or off-site storm sewers, dry wells, or waterways.
WQ-38	**Well or Exploratory Boring Contaminant Protection**	Any substances or materials that may degrade groundwater quality will not be allowed to enter any well or boring. Lubricants used on drill bits, drill pipe, or tremie pipe will not be comprised of oily or greasy substances or other materials that may degrade groundwater quality. Well openings or entrances will be sealed or secured in such a way as to prevent the introduction of contaminants.
		Source: Santa Clara Valley Water District Well Construction – Destruction Standards

HYDROLOGY AND WATER QUALITY (CONT.)		
WQ-39	**Exploratory Boring Destruction**	All borings should be backfilled within 24 hours of termination of testing. Borings will not be left in such a condition as to allow for the introduction of surface waters or foreign materials into them. Borings will be secured such that they do not endanger public health. All borings must be properly destroyed by backfilling with acceptable sealing materials. Acceptable sealing materials are: 1. 27 sack neat cement (four 94-pound bags/55-gallon drum), 2. 10 sack cement sand grout, or 3. hydrated high solids 20 percent bentonite slurry. No soil cuttings may be used for backfilling boreholes. Bentonite pellets may only be used for backfill of less than 3 feet of overdrill. Free fall of sealing material will not be allowed if greater than 30 feet or if more than 3 feet of standing water exists in borehole. A tremie pipe must be used to place the cement sealing material if exploratory boring is over 30 feet deep or if more than 3 feet of standing water exists in borehole. Exploratory borings located in Geologic Setting Zone 4 (bedrock) may be backfilled with borehole cuttings from total depth of the boring up to a depth of 50 feet from the surface grade. The top 50 feet of the borehole must be backfilled with above described sealing materials.
		Source: Santa Clara Valley Water District Well Construction – Destruction Standards
NOISE		
NO-1	**Noise Pollution**	Noise produced by construction activities will not exceed the applicable local noise ordinance standards. During normal working hours (see NO-2), operational noise shall not exceed 75 dBA at any point on the property upon which the noise is generated. If adjacent property is zoned residential, operational noise shall not exceed 60 dBA at any point on adjacent property. Power equipment used on a temporary basis can exceed the above limits during normal working hours (see NO-2).
		Source: District Special Provisions Guidelines Article 15.02.01 and Section 19.42.030 of the Sunnyvale Municipal Code
NO-2	**Residential Noise Management**	The District will implement practices that minimize disturbances to residential neighborhoods surrounding work sites. 1. In general, work will be conducted during normal working hours – Monday through Friday 7:00 a.m. to 6:00 p.m; Saturday 8:00 a.m. to 5:00 p.m. 2. Internal combustion engines will be equipped with adequate mufflers. 3. Excessive idling of vehicles will be prohibited. 4. All construction equipment will be equipped with manufacturer's standard noise control devices. 5. The arrival and departure of trucks hauling material will be limited to the hours of construction. 6. The use of jake brakes is prohibited in residential areas.
		Source: SMP Provision No. 4.2
TRANSPORTATION/TRAFFIC		
TR-1	**Public Safety Measures**	Fences, barriers, lights, flagging, guards, and signs will be installed as determined appropriate by the public agency having jurisdiction, to give adequate warning to the public of the construction and of any dangerous condition to be encountered as a result thereof.
		Source: District Standard Provision No. 6.09

APPENDIX D

DRILLING CONTRACTOR
PROOF OF INSURANCE

Named Insured: Gregg Drilling & Testir
Insured City: Signal Hill

ACORD®

CERTIFICATE OF LIABILITY INSURANCE Page 1 of 3

DATE (MM/DD/YYYY) 04/16/2009

PRODUCER 877-945-7378 Willis Insurance Services of California, Inc. 26 Century Blvd. P. O. Box 305191 Nashville, TN 37230-5191	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED

Gregg Drilling & Testing, Inc.
2726 Walnut Ave
Signal Hill, CA 90755

INSURERS AFFORDING COVERAGE	NAIC#
INSURER A: American International Specialty Lines In	26883-001
INSURER B: Commerce and Industry Insurance Company	19410-002
INSURER C: SeaBright Insurance Company	15563-100
INSURER D:	
INSURER E:	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS	
A	X	GENERAL LIABILITY	PROP8089471	8/1/2008	8/1/2009	EACH OCCURRENCE	$ 1,000,000
		☒ COMMERCIAL GENERAL LIABILITY				DAMAGE TO RENTED PREMISES (Ea occurence)	$ 300,000
		☐ CLAIMS MADE ☒ OCCUR				MED EXP (Any one person)	$ 25,000
		☒ Pollution Liability				PERSONAL & ADV INJURY	$ 1,000,000
		☒ Prof. Liability				GENERAL AGGREGATE	$ 2,000,000
		GEN'L AGGREGATE LIMIT APPLIES PER:				PRODUCTS - COMP/OP AGG	$ 2,000,000
		☐ POLICY ☒ PROJECT ☐ LOC					
B		AUTOMOBILE LIABILITY	CA8087728	8/1/2008	8/1/2009	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
		☒ ANY AUTO					
		☐ ALL OWNED AUTOS				BODILY INJURY (Per person)	$
		☐ SCHEDULED AUTOS					
		☐ HIRED AUTOS				BODILY INJURY (Per accident)	$
		☐ NON-OWNED AUTOS					
		☐				PROPERTY DAMAGE (Per accident)	$
		GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
		☐ ANY AUTO				OTHER THAN AUTO ONLY: EA ACC	$
		☐				AGG	$
		EXCESS / UMBRELLA LIABILITY				EACH OCCURRENCE	$
		☐ OCCUR ☐ CLAIMS MADE				AGGREGATE	$
							$
		☐ DEDUCTIBLE					$
		☐ RETENTION $					$
C		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	BB1080261	8/1/2008	8/1/2009	☒ WC STATUTORY LIMITS ☐ OTHER	
		ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N: N				E.L. EACH ACCIDENT	$ 1,000,000
		If yes, describe under SPECIAL PROVISIONS below				E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
						E.L. DISEASE - POLICY LIMIT	$ 1,000,000
		OTHER					

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

Project: Permanente Creek Flood Protection.

Professional Liability is claims made. Per Project General Aggregate excludes Professional Liability.

CERTIFICATE HOLDER

Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

CANCELLATION Except for 10-Day notice for non-payment of premium.

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ~~ENDEAVOR TO~~ MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEF~~T, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.~~

AUTHORIZED REPRESENTATIVE

Andrew K Buel

ACORD 25 (2009/01) Coll:2674053 Tpl:813997 Cert:12418052

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Willis **CERTIFICATE OF LIABILITY INSURANCE** Page 2 of 3	DATE 04/16/2009

PRODUCER 877-945-7378 Willis Insurance Services of California, Inc. 26 Century Blvd. P. O. Box 305191 Nashville, TN 37230-5191	**THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.**	
	INSURERS AFFORDING COVERAGE	**NAIC#**
INSURED Gregg Drilling & Testing, Inc. 2726 Walnut Ave Signal Hill, CA 90755	INSURER A: American International Specialty Lines In	26883-001
	INSURER B: Commerce and Industry Insurance Company	19410-002
	INSURER C: SeaBright Insurance Company	15563-100
	INSURER D:	
	INSURER E:	

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

It is agreed that The Santa Clara Valley Water District, its directors, officers, employees and agents, City of Mountain View, and City of Los Altos are included as Additional Insureds as respects to General Liability.

IMPORTANT

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

DISCLAIMER

This Certificate of Insurance does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

ENDORSEMENT NO.

This endorsement, effective 12:01AM, 8/1/2008
Forms a part of Policy No: PROP8089471
Issued to: Gregg Drilling & Testing, Inc.
By: American International Specialty Lines Ins. Co.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED ENDORSEMENT
COVERAGE A, B AND C

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY AND PROFESSIONAL LIABILITY POLICY

SCHEDULE

Name of Person or Organization: AS REQUIRED BY WRITTEN CONTRACT

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement)

It is hereby agreed that Section II of the policy, WHO IS AN INSURED is amended to include as an insured the person or organization shown in the schedule above as respects Insuring Agreements A, B and C, but only with respect to liability arising out of your ongoing operations performed by you or on your behalf for that insured. Coverage is not afforded for the additional insured's own liability, which arises solely out of its acts or omissions.

The entities scheduled above are covered under this Policy only for limits of liability up to but not exceeding the amount required by the written contract with the insured and subject to the limits of liability of this Policy.

All other terms, conditions, and exclusions shall remain the same.

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